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MEDICAL ASPECT OF 6-PROPYLTHIOURACIL*

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Propylthiouracil is the most recent and by far the least toxic of the goitrogenic anti-thyroid compounds that have been used clinically for the control of hyperthyroidism. A discussion of propylthiouracil, however, should best be centered around the thiouracils in general as they all have the same physiologic action, the essential difference between the individual compounds being the degree of potency and toxicity.

The era of anti-thyroid drugs began in 1943 when Astwood[1] and simultaneously the MacKenzies[2] directed attention to the thyroid depressing effect of thiourea and certain sulfonamides; these drugs had been known to cause goiter and also depress thyroid function when fed to experimental animals. An exhaustive study of more than two hundred compounds by Astwood et al.[3] revealed that two types of chemical structures had anti-thyroidal activities: the more active were the thiourea derivatives—having a carbonamide grouping; the less active were substances having an aminobenzine group, such as the sulfonamides. Sulfadiazine was the most active of the latter, but as a whole they were only one-fourth as active as the thioureas. Of the thioureas, thiouracil, thiourea and thiobarbital possessed the best activity-toxicity ratio and were investigated first.[4]

Thiobarbital has been found to be more toxic than thiouracil routinely but is tolerated by some who show toxicity to thiouracil.

When taken orally, thiouracil is rapidly absorbed from the stomach and upper gastrointestinal tract, about 15 per cent being destroyed there. It is distributed throughout the body fluids and tissues, the largest concentrations being found in the bone marrow, thyroid, ovaries and pituitary. Excretion in the urine begins immediately and after 48-72 hours none of the drug is present in the blood or urine.[6]

Practically no tissue changes occur in any of the organs except the thyroid. Here, within 48 hours an increased vascularization and hyperplasia begins, with cellular proliferation and infoldings into the acini. The production of thyroid hormone is stopped and associated with this is a rapid decrease in the thyroid's ability to hold iodine, resulting in its gradual disappearance. The colloid also disappears in one to two weeks. Concomitant with the disappearance of the colloid the basal metabolic rate begins to fall. In the experimental animal evidence of enlargement of the gland occurs in a few days with a three-fold increase in size in two weeks.[1, 7]

The mode of action of thiouracil is to prevent the iodine to diiodotyrosine to thyroxine synthesis within the thyroid cell;[8, 9] this may be due to a depression of the peri-

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oxidase or cytochrome oxidase enzyme systems.[10, 11] However, the actual mechanism is not clear.[24] It does not prevent the secretion of pre-formed thyroxine, thus explaining the lag before the basal metabolic rate falls.

After six months of therapy a tendency towards involution occurs with the gland becoming smaller.[1]

When thiouracil is discontinued a reversal of the histologic picture takes place with involution and re-formation of colloid and thyroid hormone. The enlargement, however, is noted long after the histologic picture is normal.

No evidence of neoplasia has been seen, but the simultaneous administration of thiouracil with acetaminoflourine, a potent carcinogen, has been found to produce invasive tumors of the thyroid when either drug alone would not do so.[12]

The administration of iodine with thiouracil does not abolish the effect of the latter but it does cause a certain amount of involution and decreased vascularity to take place. Previous iodine administration was earlier thought to delay the action of thiouracil; however, later investigators have found no significant delay in response if iodine had been given earlier.[13]

The hyperplasia induced by thiouracil is due to increased production of thyroid stimulating hormone by the anterior pituitary—which is a result of the diminished thyroid hormone production. This is substantiated by the fact that hypophysectomy or administration of thyroxine completely inhibits the action of thiouracil to cause thyroid hyperplasia.[1] That administered thyroxine inhibits thyroid stimulating hormone production is well known.

In Graves' disease the action of thiouracil is the same. The over-producing thyroid makes no more hormone and in two to three weeks the basal metabolic rate begins to fall, requiring approximately one day of treatment for each per cent the basal metabolic rate is elevated for it to revert to normal.[15] The pulse rate falls, there is a gain in weight, and the symptoms of thyrotoxicosis disappear. Evidently the already over-producing anterior pituitary—the cause of which is unknown—is not greatly stimulated. This is borne out by the fact that in except a very few instances there is little or no enlargement of the thyroid gland nor increase in exophthalmos. Indeed, some observers report a decrease in both in the majority of the cases.[14]

In toxic adenoma the results are the same, only the rate of response may be slower.

The remarkable certainty and smoothness with which thiouracil abolishes all symptoms of thyrotoxicosis plus the absence of "thiouracil escape" has caused its acceptance by many authorities and, almost generally, as the best preoperative drug available. Its use substantially eliminated the postoperative crisis, the necessity of multiple stage surgery, and has greatly lowered the overall mortality.[15] The increased vascularity and friability of the gland which earlier caused technical difficulty in its removal has been controlled by the addition of iodine during the last three weeks of treatment.

As with most other drugs, thiouracil has several disadvantages, the main one being its toxicity. It has been found to produce fever, lymphadenopathy, urticaria, headaches, purpura, jaundice, salivary gland enlargement, hematuria, edema of the legs, joint pains, leukopenia and agranulocytosis. The majority of these are uncommon and seldom necessitate discontinuance of the drug; either reducing the dosage or stopping it for two or three days causes their disappearance. Fever or agranulocytosis constitute its only serious toxic effects and usually requires its withdrawal.

The results obtained in over 5000 patients treated with thiouracil[16] show that in approximately 13 per cent there is some untoward reaction, in 8 to 10 per cent the reactions forcing a permanent withdrawal. The incidence of agranulocytosis is about 2.5 per cent (with a 15 to 26 per cent mortality). The overall mortality has been about 0.5 per cent. It should be pointed out that this figure includes those persons treated before the toxic effects were well

known, and also before penicillin was generally available.

Other disadvantages are an approximately 10 per cent failure rate and its low percentage of permanently induced remissions. The figures available of people followed up to 36 months show that about 50 per cent have had no recurrence after the drug's withdrawal. As thiouracil has only been used three years it is too early accurately to determine the percentage of permanent remissions. It appears that thiouracil produces a permanent remission only in milder cases of shorter duration and with smaller thyroid glands—those that are prone to remission; the more severe cases with larger glands usually require maintenance doses.

It has also been shown that thiouracil crosses the placenta and will cause thyroid hypertrophy in the fetus.[17] Rats born from thiouracil treated mothers had hyperplastic thyroids at birth but were normal in size and weight.[18] Although the hypertrophy disappeared and no ill effects were noted, thiouracil should probably be used with caution in pregnancy.

In an attempt to find less toxic anti-thyroid drugs, other compounds related to thiouracil are being investigated. Astwood found twenty-five of two hundred and twenty compounds "as active or more active than thiouracil."[3] Of these, propylthiouracil was the most powerful and eleven times as strong as thiouracil in the experimental animal. It has had rather extensive clinical investigation so far and has proved to be two to three times as strong as thiouracil in man. Initial doses of 150-200 mgm. daily and 25-75 mgm. daily as a maintenance after the basal metabolic rate has returned to normal is as effective as 600 mgm. daily of thiourcil initially and 200 mgm. daily for maintenance. It has also proved to be far less toxic than thiouracil. In Astwood's first 100 cases there were no toxic reactions.[21] Lahey reported the use of propylthiouracil in 160 patients —60 of whom had had surgery and 100 who were "in preparation for surgery." He stated that "two have already shown marked depression of the white cell count."[19] Another group discontinued the drug in one of 110 cases because "mild sore throat and a fall in leucocyte count followed repeated trials."[22] McGavack et al. found only one case of toxicity, a severe febrile reaction, in 75 patients.[20] A summary of 284 other individual cases reveals a toxicity rate of 5.9 per cent leucopenia occurred in eight cases (2.8 per cent). Propylthiouracil was discontinued in three of these and was also discontinued in another case of nausea and gastro-intestinal upset—a total of four cases in which the drug could not be used.[23] Although no cases of agranulocytosis were reported, Bartels has reported one non-fatal case of agranulocytosis.[23] Propylthiouracil has been used successfully in patients who developed severe reactions to other thiourea compounds.[21, 22] The failure rate has been reported as about 10 per cent, although this may prove to be high.

A comparison of these figures with those of thiouracil clearly establishes the superiority of propylthiouracil as an anti-thyroid drug.

In discussing the place of anti-thyroid drugs in the treatment of thyrotoxicosis, Williams' statement[6] is aptly made: "The obscurity of the primary cause makes it difficult to know what the ultimate goal in treatment should be—other than to abolish the obvious manifestations of the disease."[6] Certainly the ultimate cure of thyrotoxicosis lies in a different realm from either thyroid surgery or anti-thyroid drugs. However, abolishing the obvious manifestations of the disease is the only choice we have now and in that propylthiouracil has an important place.

Of the several effective methods of treatment available today, the use of an anti-thyroid drug (propylthiouracil being the one of choice) until the basal metabolic rate is normal followed by subtotal thyroidectomy seems to offer the lowest mortality and at the same time the largest percentage of permanent remissions. Although a lasting remission is desirable, the most important objections to continued thiouracil treatment alone were the never ending

(though reduced) danger of agranulocytosis with its accompanying mortality, and its resultant necessity of having to follow a patient so closely for such a long period of time, possibly a lifetime. A drug such as propylthiouracil or a future one even less toxic or not toxic at all may eliminate these objections and perhaps may make thyroid removal unnecessary in the majority of cases. More definite conclusions can be reached only after propylthiouracil (or its successor) has been more completely evaluated. Radio-active iodine will also have to be evaluated; it may prove to be superior to any of the thiourea derivatives.

It must be borne in mind that drug treatment alone will not be entirely satisfactory as long as thyroid enlargement persists. The possibility that anti-thyroid drugs may predispose to malignancy, although unlikely, must be ruled out; and the tendency for malignancy to develop in adenomatous goiter probably indicates surgical removal in all cases. Also, some people will always prefer surgery for cosmetic reasons.

CONCLUSION

These facts indicates that although the development of non-toxic anti-thyroid drugs may place the treatment of thyrotoxicosis largely in medical hands, as a whole the treatment will have to be individualized, a certain percentage always requiring surgery. Obviously, the anti-thyroid drugs are a boon to those with complications that contraindicate an operation but in the past have had to submit to one.

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THIOURACIL IN TOXIC THYROID DISEASE*

ITS PREOPERATIVE USE IN A PUBLIC HOSPITAL IN A NON-ENDEMIC AREA†

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Since the introduction of thiouracil as a clinical agent in 1943, one of us (F. F. B.) has used it in private practice in the prep-

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aration for operation of approximately 20 patients with severe hyperthyroidism. For this purpose it has proved extremely satisfactory, though there has been the usual, apparently inevitable, percentage of undesirable reactions. For such a meeting as this, however, it has seemed to us that the presentation of the experience of a single surgeon with a group of patients who were selected for the administration of the drug on rather strict indications would be less useful than the presentation of a combined experience from a large public institution such as Charity Hospital of Louisiana at New Orleans.

Thiouracil was first used at Charity Hospital February 28, 1944, and between that date and March 1, 1947, 58 patients with toxic thyroid disease were prepared for operation with it, alone or in combination with iodine. During the same period 52 patients with the same disease were operated on after preparation for surgery with iodine alone. There was one death after operation in each group.

The iodine-treated group in no sense serves as a control for the thiouracil-treated group. The distribution was substantially the same as to age and race, but there were 12 men in the thiouracil group as compared to only three in the iodine group; the possible significance of that discrepancy will be pointed out later. Generally speaking, the degree of toxicity was perhaps somewhat lower in the iodine-treated group than in the thiouracil-treated group, though in numerous individual cases it seemed equally high. There was no attempt, however, to treat patients alternately with one drug or the other. Furthermore, it was often not clear why tiouracil was withheld in the cases in which it was not used. For that matter, some of the patients in whom it was used would probably have progressed quite as well without it, while some would perhaps have done better on iodine. In view of the fact that the 58 thiouracil-treated patients were managed by 30 surgeons, 13 of whom were residents, one would scarcely expect to find any considerable degree of uniformity of usage.

No attempt will be made, therefore, to present this material from a statistical standpoint, quite aside from the fact that the number of cases as a whole and in the separate disease categories is too small to make a statistical presentation valid. On the other hand, previous studies of thyroid disease[1, 2] have engendered a familiarity with the disease as it is managed in this institution which warrants the reporting of impressions and even the drawing of certain conclusions from the material presented herewith.

ANALYSIS OF DATA

Summary of Deaths: The single death in the thiouracil-treated group of patients occurred in a 44 year old colored woman with a diffuse toxic goiter complicated by a cardiac factor who had had toxic symptoms for six months when she was first seen. She had lost 40 pounds. The blood pressure was 270/100 and the pulse rate 142 per minute. She was jaundiced and presented pitting edema of the abdomen and extremities. The initial basal metabolic rate was plus 46. The icterus index was 29.4 and later rose to 71.2 before the jaundice disappeared. The hippuric acid test of liver function showed an excretion of 0.7 gm. of sodium benzoate in one hour.

Under treatment with diuretics, digitalis, diet, sedation, thiouracil for 44 days and Lugol's solution for nine days, the patient improved materially and the basal metabolic rate reading fell to plus 21. At the end of a two month period of hospitalization she was permitted to spend Christmas at home. When she returned, her pulse rate was 86 per minute but the basal metabolic rate had risen to plus 33 and the blood pressure was 198/99. After additional preparation with thiouracil and iodine for 13 days, subtotal thyroidectomy was performed under ethylene ether (endotracheal) anesthesia. The operation, which occupied 70 minutes, was carried out without any difficulty. The patient's pulse on the table varied from 80 to 132 per minute and was always of good volume. Breathing had been noisy, however, and 10 minutes after she was re-

turned to her bed it stopped altogether. There was no response to artificial respiration, and tracheotomy was ineffective. Necropsy was not permitted, and death was attributed to cardiac causes. The basal metabolic rate reading the day before operation had been plus 32.

The single death in the iodine-treated group of patients occurred in a 41 year old colored woman with toxic diffuse disease and was also attributed to cardiac causes. The pulse rate was decreasing and there had been a minimal gain in weight, but, as in the previous case, operation was done in the face of a rising basal metabolic rate.

For a fair presentation of the status of toxic thyroid disease at the New Orleans Charity Hospital, it is necessary to point out that during the period in which these two surgical deaths occurred, seven other deaths occurred from this disease, as follows:

A 51 year old negro woman with toxic nodular goiter died on the table, presumably of cardiac causes, during the induction of ethylene-ether anesthesia, before any surgery was undertaken. She had been prepared with iodine and had had no thiouracil. The pulse rate was decreasing but the basal metabolic rate was rising when operation was done.

A 48 year old colored woman with toxic diffuse goiter complicated with cardiac disease also died on the table under the same circumstances. She had received Lugol's solution for 24 hours and thiouracil for 33 days, and also had been treated with digitalis. At the time of operation the pulse rate had fallen from 110 to 90 and the basal metabolic rate was plus 15.

The five other patients, who died without reaching the operating room, included:

A 28 year old colored woman with toxic nodular goiter who died in thyroid crisis, possibly with a cardiac element, 17 days after admission. Her basal metabolic rate was plus 77 and she had received thiouracil for two days.

A 52 year old woman with nodular toxic goiter who died a cardiac death five days after admission. She had received thiouracil for five days.

A 70 year old white female with toxic nodular goiter who had received thiouracil on two previous admissions, with good control of toxic symptoms. She died a cardiac death 48 hours after she had been admitted for the third time.

A 62 year old colored male with toxic diffuse goiter who had received thiouracil for eight days on a previous admission. His basal metabolic rate was plus 8. He was readmitted four months later and died in crisis within 48 hours.

A 39 year old colored male with toxic diffuse goiter who died of coronary occlusion, possibly with an element of crisis, 70 days after admission to a medical ward. He had received thiouracil for 32 days, during which time his basal metabolic rate had fallen from plus 43 to plus 21.

Another death in a patient with possible toxic thyroid disease is not regarded as due to thyroid causes but to cardiac disease complicated by embolic peripheral vascular disease. The history was somewhat suggestive of thyrotoxicosis, but it was regarded merely as an unproved possibility.

Clinical Picture: When the toxicity of the 58 thiouracil-treated patients is graded on an ascending scale from plus 1 to plus 4, it is found that 27 of the 47 patients with diffuse toxic goiter and five of the 11 patients with toxic nodular goiter had a toxicity of plus 3 or plus 4. Seventeen presented 3 plus toxicity and 15, 4 plus. It should be emphasized that the degree of toxicity is based on the clinical impression and on repeated observations of the pulse rate. In the absence of definite manifestations of thyrotoxicosis no reliance was placed on the initial basal metabolic rate determination.

The duration of toxic symptoms, according to the patients' histories, ranged from less than a month in eight cases to five years in three cases. In 31 cases, 26 of which were instances of diffuse toxic goiter, the duration was less than six months. In 24 of the remaining cases, 19 of which were also instances of diffuse toxic goiter, symp-

toms had been present less than two years; the single fatal case is included in the latter group. Four of the five negro males in this group, three of whom were extremely toxic, had had symptoms less than a year. Both negro males with toxic nodular goiter also were extremely toxic. One had had symptoms for three months and the other for 18 months.

Procedure: Sixty-eight operations were performed in the 58 thiouracil-treated cases, including: Two total thyroidectomies, both on white female patients with nodular goiter; 22 stage procedures, 18 for diffuse and four for nodular goiter; 44 subtotal operations.

One operation was done under local analgesia and the remainder under ethylene or cyclopropane anesthesia combined with ether vapor. Intubation was employed in 38 cases, usually for the deliberate purpose of training residents specializing in anesthesia; the great majority of the patients did not need it.

ANALYSIS OF DATA IN RESPECT TO THIOURACIL

Administration: The usual routine of dosage was to administer thiouracil in 0.2 gm. doses three times daily. In some instances the dosage was later reduced to 0.1 gm. Duration of treatment varied from one to 54 days in 49 patients. The other nine patients were treated respectively for 60, 69, 85, 89, 90 (2 patients), 121, 123 and 222 days. Most of the patients treated for periods of time such as this represented ineffective attempts by the medical service to control the disease by thiouracil. Eleven patients received thiouracil for 14 days or less. In three of these cases the drug had to be discontinued because of untoward reactions while in three others the response was so prompt that iodine could be substituted and operation performed without further delay. The breakdown in methods of administration was as follows:

In 11 cases (10 toxic diffuse disease, one toxic nodular) thiouracil alone was used.

In 20 cases (19 toxic diffuse disease, one toxic nodular) thiouracil and iodine were used simultaneously. The single fatal case is included in this group.

In 27 cases (18 toxic diffuse disease, nine toxic nodular) thiouracil was discontinued before iodine was begun.

It should be added here that 13 of the 58 patients had previously been treated with iodine, with good results from the standpoint of control of toxicity in two cases, fair results in six and poor results in five.

Reactions: In 14 of the 58 thiouracil-treated patients there were 27 reactions, distributed as follows:

Agranulocytosis and leukopenia of varying degrees in 10 patients, combined in one case with edema and arthralgia.

Edema and arthralgia in one patient.

Leukopenia in one patient.

Dermatitis in two patients.

The reactions occurred in five of the 11 patients with toxic nodular goiter and in nine of the 47 patients with diffuse toxic goiter. Eight of the affected patients were negroes (three males, five females) and six were white (two males, four females).

In five of the 14 patients who developed reactions it was possible, after an interval of withdrawal, to resume the drug and to continue it as long as was desired. In a sixth case the patient developed agranulocytosis and leukopenia a second time and thiouracil was permanently withdrawn, as it was in the remaining eight cases.

The most serious reaction observed occurred in a 49 year old colored male with toxic diffuse goiter. On admission his white blood cell count was 6,750 per cu. mm. It fell to 3,200 per cu. mm. after he had received 1.4 gm. of thiouracil over a four day period. The drug was withdrawn at once, but the white blood cell count continued to fall; on the day after withdrawal it was 2,600 per cu. mm., and 24 hours later there were no white cells at all in the blood specimen. The count returned to normal levels after several transfusions and four doses of pentnucleotide (10 c.c. each). The patient was then prepared for operation with Lugol's solution, and subtotal thyroidectomy was performed without further untoward incident. In another case, in which the fall in the white blood cell count was similar though less extreme, the drug could be re-

sumed after a period of withdrawal during which the patient was treated with penicillin.

Vascular Changes in the Gland: This series bears out the general observation that bleeding at operation is likely to be more annoying in diffuse than in nodular goiters and that patients prepared with thiouracil alone may present very troublesome hemorrhage. Vascularity was annoying at operation in only one of the 13 operations performed in the 11 patients with nodular toxic goiter; in this case the drug had been given for only four days when it had to be withdrawn because of the reaction. As this was 20 days before operation, thiouracil probably played no part in the vascular difficulty.

In the toxic diffuse group, of the 12 patients prepared with thiouracil alone, one patient presented 1 plus bleeding, two presented 2 plus, four presented 3 plus, and one presented 4 plus vascularity. Thirteen other patients prepared with thiouracil and iodine by various regimens presented abnormal bleeding ranging from 1 plus in three cases to 4 plus in four cases.

These figures are presumed to be correct. A surgeon who has been troubled by excessive bleeding during a thyroid operation is unlikely to omit mention of it in his operative notes.

Response to Therapy: Generally speaking, all 58 patients in this series showed a definite response to thiouracil. In all instances the pulse rate decreased, and in 51 instances the basal metabolic rate reading also decreased. The response in both these respects was quite as striking in thyrocardiac as in uncomplicated toxic thyroid disease. Sixteen patients with clearcut cardiac disease associated with thyrotoxicosis, which in two instances masked the thyroid disease, had been treated initially by digitalis, with fair but by no means striking or entirely satisfactory results. In every instance the response, when thiouracil was added, was prompt and striking. All of these cases proved, in fact, that thiouracil in thyrocardiac disease frequently serves as a "medical" or "physiologic" thyroidectomy.

Thiouracil does not act as promptly as iodine and the evidence of a favorable action is therefore somewhat slower in appearing. In some instances in this series no results were noted until 21 days had elapsed, but in others improvement began when the drug had been given for only seven days. The first effect which the patient experiences is a sense of well-being, followed by a gain in weight, decrease in pulse rate and decrease in basal metabolic rate. From the standpoint of the physician the most notable response is the improved stability of the patient, who is translated from a tremulous, tearful, unstable state to what Means[3] has called a euthyroid state. In most stage operations little or no preparation was needed for the second stage.

In this series the response was somewhat more rapid in nodular toxic goiter than in the diffuse variety. In the literature which we have reviewed only Reveno[4] reports a similar experience.

The response of negroes, which does not seem to have been commented on previously in the literature, impressed us as being somewhat more rapid than that of the white patients. This is perhaps to be explained by the fact that most negroes find themselves in the hospital in circumstances far superior to those in which they live ordinarily. Their environment is comfortable, their food is good, it contains from 4,000 to 6,000 calories per day, and it is provided with no effort on their part. The negro response to iodine is no more notable than that of the white subject, and the impression that the response to thiouracil is more rapid than that of the white patient is advanced merely as an impression.

FOLLOW-UP

No information is available after their departure from the hospital on four of the 57 patients who survived operation. One of the four, a 27 year old negro woman with diffuse toxic goiter, refused to submit to second-stage lobectomy and deserted with a basal metabolic rate of plus 98. Another of the patients in this group, who also had

been submitted to lobectomy, returned to the clinic once or twice after she left the hospital, then disappeared.

The current status of the remaining 53 is as follows:

The period of observation after discharge from the hospital ranges from 16 to 849 days. Twenty-two patients have been followed for periods ranging from one to three months, 11 for periods between three and six months, four up to nine months, five up to 12 months, six up to 18 months, four up to two years, and one for almost two and a half years.

Two patients are awaiting second stage lobectomy. Both are in good condition.

Forty-one patients have been free from symptoms for periods varying from 16 to 756 days. Of these, 19 have been followed-up for less than three months and 17 have been followed-up for six months or more.

Five patients (one colored woman with nodular goiter, two colored women with diffuse goiter, two colored men with diffuse goiter) have presented varying degress of clinical hypothyroidism, in one instance with myxedema. Manifestations in all instances, including one patient in whom complete thyroidectomy was done, have been readily controlled with thyroid extract.

Two patients (one colored female with diffuse goiter, one white female with nodular goiter) have presented symptoms suggestive of parathyroid tetany. Both have responded satisfactorily to treatment with calcium, parathormone and vitamins.

Three patients are still toxic. The first is a 44 year old woman with toxic diffuse goiter, followed-up for 160 days after lobectomy; the second stage of operation was refused. Her present basal metabolic rate reading is plus 43. She received thiouracil for 222 days before operation and had an apparent medical cure. The second patient is a 47 year old colored male with diffuse toxic disease complicated by a cardiac factor, who has been followed for 675 days after stage thyroidectomy. When he was last seen his basal metabolic rate reading was plus 46 and he was clinically toxic. He received thiouracil for 60 days and developed agranulocytosis and leukopenia in the course of treatment. The third patient is a 24 year old white female with nodular toxic goiter. Her history of toxicity extends over four and a half years. She was submitted to stage thyroidectomy in England, and was also treated by stage surgery in Charity Hospital. She developed agranulocytosis and leukopenia after four days of treatment with thiouracil and was prepared for both stages of surgery with Lugol's solution. She bled profusely during the first stage but presented no undue vascularity during the second. At this time, 197 days after operation, her basal metabolic rate is plus 29 and she is clinically toxic.

COMMENT

In previous studies of thyroid disease[1, 2] from the New Orleans Charity Hospital we have made the point that this particular condition fully bears out the axiom that any disease is most a problem where it is least a problem. Over the twelve and a half year period ending July 1, 1938, only 952 patients with thyroid disease of all types were operated on in this institution, of whom 50 died; during the same period 53 patients died without surgery. Four hundred twenty of the 952 patients had toxic disease, of whom 38 died after operation. Toxic disease was the cause of 49 of the 53 non-surgical deaths. The most disconcerting aspect of these statistics was that non-surgical deaths in toxic subjects greatly exceeded surgical deaths during the last five years of the analysis. The excess of non-surgical over surgical deaths in the last three and a half years at Charity Hospital is similarly disconcerting.

In former studies, which were chiefly concerned with cases treated at the old hospital, attention was called to the difficulties of preparing toxic thyroid patients for surgery in completely unpropitious and actually antagonistic surroundings, and indeed of treating them at all under the circumstances which prevailed. Overcrowded, noisy wards, often with two patients to a bed, made isolation impossible and increased the patient's emotional instability.

By adequate criteria, even the best prepared patients were poorly prepared and their risk was increased, it was emphasized, by the fact that surgeons, their assistants, anesthetists and nurses all had very little experience with the disease because of the small number of cases which occur in this non-endemic community.

Although conditions are naturally much better in the new and modern Charity Hospital, they are still not ideal for the treatment of toxic thyroid patients. Isolation and bed rest are still impossible of complete attainment. It is perhaps a compromise with reality, but it is nonetheless a real improvement that with thiouracil this strict regimen is no longer carried out. The patient is permitted to be ambulatory, to associate with other patients, and to have as many visitors as the hospital rules permit. The shortening of hospital stay days achieved in private patients treated by thiouracil is not as apparent in Charity Hospital, where, for obvious reasons, out-of-town patients and frequently city patients as well must be prepared for operation in the hospital. The reduction of nursing care, however, is a distinct advantage in this period of extreme personnel shortages.

The number of patients who had reactions from thiouracil in this series, 14 of 58, is somewhat higher than in some reported series, though the numbers are too small to be of statistical value. Fowler and Cole,[5] in an analysis of 1,543 reported cases, found the incidence of reactions to be 13.8 per cent. Their occurrence, as well as the impossibility of preventing them, is granted by all observers to be the greatest disadvantage of thiouracil therapy. They can readily be picked up, however, if observation is adequate, and treatment with penicillin, though the rationale is not entirely clear, seems to have eliminated their chief risk.

Moore[6] suggested that the most dangerous period, from the standpoint of possible reactions, is between the fourth and eighth weeks of therapy. Four of the 14 patients who developed reactions in this series developed them during this time, but two patients manifested them after four days of treatment and one after five days, while at the other extreme two patients developed them on the eighty-ninth and ninety-first days respectively. The point made by several observers is well taken, that the risk of agranulocytosis is so great that thiouracil should be discontinued several days before operation, lest this serious complication occur without detection in the postoperative period. This precaution was not observed in a number of cases in this series and it is fortunate that no harm resulted from the omission.

The question arises as to whether the 22 lobectomies performed in 13 of the patients in this small series were really necessary. According to Bartels and Bell,[7] at the Lahey Clinic, where the average of stage operations has been 16 a year, lobectomy was not employed at all in the last year of the period covered by their analysis of 400 thiouracil-treated surgical cases. It may have been that the lobectomies performed at Charity Hospital represented unnecessary caution. On the other hand, the single patient who died was not submitted to stage surgery. Furthermore, three of the five postoperative crises, one of which was very severe, occurred in patients submitted to lobectomy; all three patients survived, but the thought naturally suggests itself that the outcome might have been less happy had more extensive surgery been done. The speculation is not the less significant because one of the three patients was frankly not well prepared and in another case preparation could have been better.

Generally speaking, this series bears out the experiences of most surgeons that thiouracil is a useful agent in the preparation of toxic thyroid patients for operation. We consider it striking, as has already been intimated, that the case fatality rate in males, particularly negro males, which has been prohibitively high in previous studies, is zero in this series, in spite of the extreme toxicity which these patients presented. That the drug was necessary in every instance in which it was used is very doubtful. That it was not used rationally in

every case is evident; some interns and residents merely translated the old habit of administering Lugol's solution to a toxic thyroid patient as soon as he came on the ward to this new agent. Toxic reactions occurred, which were potentially serious, but because they were being looked for, they did not progress to serious stages. The gravest criticism of thiouracil at Charity Hospital, and one which needs no comment, is the fact that, in addition to the patient who died after operation, six patients who were or had been treated with it died under treatment, one on the operating table during induction of anesthesia, the others without surgery. It is only fair to add that this is perhaps not so much a criticism of the agent as of the method by which it was used. Certainly these deaths bear out again the unwisdom and actual folly of submitting to operation patients with rising or stationary basal metabolic rates, regardless of what improvement they may show in other directions.

SUMMARY AND CONCLUSIONS

An analysis of 58 cases of toxic thyroid disease treated with thiouracil in preparation for operation at the New Orleans Charity Hospital over the past three years indicates that this drug is a useful adjuvant to the armamentarium in this disease.

The majority of the patients in the series received the drug as a specific part of their preparation for operation. Several cases are included, however, in which it was begun with the idea that operation would not be necessary, a belief that proved fallacious because remission of toxicity was only temporary.

Toxic reactions occurred in 14 of the 58 patients but were not serious because they were promptly detected.

Lobectomies may have been performed in an unnecessary number of cases, but for several reasons the caution which dictated them does not seem unwise.

It is regarded as of particular significance that there were no deaths among the 12 males in this series, although previous studies of toxic thyroid disease from the New Orleans Charity Hospital have shown a high case fatality rate in males, particularly negro males. It is suggested, however, that the non-surgical fatalities, in several of which thiouracil had been used, must be taken into consideration in estimating the worth of this drug in the treatment of toxic thyroid disease.

Much in this analysis supports the warning of Fowler and Cole[5] that the lessons which have been learned about surgery for toxic thyroid disease in the last three or four decades should not be lightly forgotten in the enthusiasm for a new and still not fully tested agent.

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ROENTGENOLOGIC ASPECT OF PNEUMONIAS*

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Not many years ago, in certain sections of this country, it was customary to give patients with fever 10 grains of quinine every four hours for two or three days, without any laboratory blood examination. This was considered a therapeutic test for malaria. If the fever persisted in spite of this therapy, the conclusion was that the pa-

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tient did not have malaria, but what caused the fever often remained a mystery. Today, it would seem that very much the same procedure in suspected cases of pneumonia is being employed by some physicians. They administer chemical and antibiotic therapy as a diagnostic measure upon the slightest suspicion of pneumonia. If there is no improvement in the condition, pneumonia is ruled out. In many instances, this is an erroneous interpretation. While it may be true that a certain response may be obtained in some bacterial forms of pneumonia, it does not eliminate other types of pneumonia. We wonder whether any one is justified in pursuing such a practice, particularly if a roentgen-ray examination of the chest is available. However, it may be that in certain unavoidable circumstances such a practice has been followed by necessity and not by preference.

The purpose of this discussion is to call attention to many conditions of the lungs which produce a pneumonitis with physical findings and clinical signs which may, at times, be confused with lobar or bronchopneumonia, and which may or may not respond to chemical and antibiotic therapy. Then, too, in some of these conditions physical examination may give but little, if any, early evidence of their presence. The roentgen ray, however, often clearly demonstrates the pathologic process; in some instances, such as bacterial lobar pneumonia, as early as from 18 to 24 hours after its inception, and hours before any diagnostic physical signs are obtainable. In atypical pneumonias, the lesion is usually demonstrated by the roentgen ray within 40 hours after the onset of the disease. It, therefore, becomes possible to detect roentgenographically an early pneumonic process, and also to observe its progress by frequent roentgen-ray studies.

When using the term "pneumonia" in this discussion, it is understood to apply not alone to the two common types of pneumonia, namely, bronchopneumonia and lobar pneumonia, but also to other conditions of the lungs which produce pneumonitis and are visualized roentgenographically as patchy, lobular or lobar consolidation. Some of these so-called pneumonias are uncommon, while others are of common occurrence. Some are caused by a virus or fungi, etc., however, all of them present interesting medical problems which may confront us at any time.

The conditions which produce pneumonitis with patchy, lobular, or lobar consolidation may be acute or chronic in character and may be due to different causes. In some instances, the clinical findings and physical signs may simulate certain bacterial pneumonias. They are enumerated according to their etiologic factor:

Virus

1. Primary atypical pneumonia
2. Influenza (epidemic)

Rickettsia

1. "Q" fever
2. Psittacosis

Bacteria

1. Lobar pneumonia
2. Bronchopneumonia
3. Tuberculous pneumonia
4. Friedländer's bacillus pneumonia
5. Chronic interstitial pneumonia
6. Streptococcic pneumonia
7. Tularemia
8. Bubonic plague pneumonia
9. Glanders pneumonia

Fungi

1. Actinomycosis
2. Blastomycosis
3. Aspergillosis
4. Moniliasis
5. Histoplasmosis
6. Torulosis
7. Coccidiomycosis

Protozoan Parasite

1. Toxoplasmosis

Chemical

1. Lipoid pneumonia
2. Irritating gas

Circulatory Disturbances

1. Rheumatoid pneumonia
2. Hypostatic pneumonia

Foreign Bodies

1. Silicosis
2. Bagassosis

Allergy (?)

1. Löffler's syndrome

Pneumonia is an inflammation of the lungs and varies roentgenographically according to the kind of lung tissue affected. In this regard, two general types of pneumonia are observed with the roentgen ray, the alveolar and the interstital. The alveolar pneumonias give a much more dense roentgen shadow than the interstitial form. This results from the air sacs becoming filled with an accumulation of inflammatory exudate, fibrin, fluid and blood, replacing their air content, without collapse of the air sacs, producing an area of consolidation. Since the air sacs now contain substances which absorb roentgen rays in greater quantity than the previously contained air, the resulting roentgen shadow is very dense, and a condition exists which also accounts for the fact that this area becomes dull to percussion, accompanied with altered breath sounds. Then, too, in alveolar pneumonia the bronchi and peribronchial tissues are but slightly affected, which is in marked contrast with the interstitial type of pneumonia. Bacterial lobar pneumonia is a representative type of alveolar pneumonia.

In the interstitial type of pneumonia, the bronchial wall and peribronchial tissues are mainly involved with an inflammatory process, and, in contrast to the alveolar type, relatively little exudate is present in the air sacs. This occasions the patch-like, lobular shadows on the roentgenogram. Then, too, in the interstitial type of pneumonia almost invariably there is some involvement of the regional lymphatic system as evidenced roentgenologically. Bronchopneumonia and some atypical forms of pneumonia may serve as representative types of interstitial pneumonia.

Certain important information may be obtained from the roentgen ray in the study of all forms of pneumonias. For example:

1. To determine whether a suspected lesion is in the parenchyma of the lung, which information is important for an early diagnosis of pneumonia. It is to be recalled that bacterial lobar pneumonia may be diagnosed within a very short time after the onset of symptoms, while in other types of pneumonia roentgen evidence of the disease appears less rapidly. On the whole, it may be said that in the earlier stages of pneumonia, the roentgen ray is more diagnostic than physical signs.

2. The roentgen ray is of great help in differentiating certain conditions which, at times, may be confused clinically with pneumonia.

3. To localize and visualize the distribution of a pneumonic process.

4. To determine whether the lesions show roentgen evidence of progression or regression.

5. The roentgen ray is of value in studying the process of resolution, and in determining whether there remain residual processes such as unresolved pneumonia, pleural changes and abscess formation.

6. Whether the pneumonic process is complicated with abscess formation, atelectasis and pleurisy with effusion.

7. Pneumonic processes situated behind the heart, or below the dome of the diaphragm usually give but slight physical signs. The roentgen ray may be most useful in locating such lesions.

It is to be appreciated that there are but few, if any, characteristic physical signs which will give a definite diagnosis of the different types of pneumonia. The laboratory and roentgenographic findings are the most conclusive evidence of the diagnosis. However, it is to be stated that while the roentgen-ray findings are not always characteristic for each pneumonic process, yet in many instances a correct inference as to the disease may result from a study of the pathologic process or processes of these various conditions when affecting the lungs. It is to be recalled that these processes are not always alike, nor do they always affect the same lung structures.

It should be appreciated that the diagnosis of pneumonia is not to be made by a single type of examination, such as the roentgen ray, physical signs, blood and

sputum examinations, but by the combination of all known factors.

The roentgenologist serves best as a medical consultant when he is given all the clinical data appertaining to the case. In this manner, the referring physician may receive important diagnostic information concerning his patient, particularly when the roentgenologist has examined a patient suspected of having pneumonia.

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CONGENITAL HEMOLYTIC JAUNDICE

A CASE REPORT WITH SPLENECTOMY IN FATHER AND SON

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Congenital hemolytic jaundice is a chronic disease with familial tendency that appears to follow a mendelian pattern. It is a disorder of the red blood cell physiology characterized by chronic anemia, increased fragility of certain of the red cells, jaundice of the acholuric type, urobilinuria, hyperplasia of the erythroid elements in the bone marrow, hereditary trait and splenomegaly. In its cycle there may be acute crises due to extensive destruction of the red blood cells, and in its course, may be complicated most frequently by cholecystitis and cholelithiasis.[1, 7, 13]

Of all the blood dyscrasias associated with splenomegaly, congenital hemolytic jaundice is the most completely identified. It was first recognized by Murchison in 1885 and fully discussed in detail by Hayem in 1898. The familial characteristics of the disease were described by Minkowski and the increased fragility of the red blood cells and the large number of microcytes and reticulocytes were observed by Chauffard. Haden has shown quite conclusively that the increased hemolysis is due to the presence of a large number of spheroidal shaped red cells which are pathognomonic of the disease, and which are more easily hemolyzed than the normal bi-concaved discs. He explains this feature on the basis of lessened ability of the spheroidal cell to stretch more than the normal bi-concaved disc. Krumbhaar has suggested that the disease be called spherocytic jaundice since the inherent defect is due to a spherocytosis. Until the cause for the presence of the spherocytosis be determined, it is wiser not to confuse the picture by still another name as this disease already has innumerable labels.

A similar condition which has been described as an acquired type, is now believed to be the congenital form but which has been dormant and has been activated by superimposed diseases. Upon investigation, other members in the family group have been found to have the disease.

The splenomegaly which is constantly present is not a primary factor and is considered due entirely to the increased function of destroying the incapacitated cells and removing the debris from the circulation. Theoretically it would appear that splenectomy would permit a longer life to the spherocytes, permitting the bone marrow to resume a more normal function. However, it has not been demonstrated that the spleen is the cause for the increased hemolysis. It is more likely that the increase in hemolysis is an *in vivo* duplication of an *in vitro* experiment, namely that the variations in the ingestion of water and salt may play a determining role. These splenectomized patients continue to show periodic jaundice and variations in the red blood cell counts. These recurrences are postulated as being due to accessory splenic tissue or to the assumption by the hemolymph nodes of the phagocytic function of the spleen.[9]

Under certain circumstances, the demand for more red blood cells is so great that the function of the bone marrow to keep up becomes disrupted and immature red blood cells and white blood cells appear in the circulation. During these episodes, the patient appears in crisis with severe anemia, fever, abdominal pain and accentuation of the jaundice. No cause for the onset of these crises has been found. It is difficult to explain these crises on the basis of a congenital disturbance in the red blood cell formation. There are numerous reports of several members of a family, suffering from this disease, who have had crises,

within a very short period of one another. This would suggest an extrinsic factor as the initiating cause of the acute hemolysis. The predominating features are the great increase in circulating spherocytes, increased blood destruction and jaundice that resemble the toxic reactions of chemical or immunologic substances, previously introduced.[2, 4, 5]

The symptoms and physical findings are to a large measure dependent upon the severity and chronicity of the disease. In the quiescent form, there may be no symptoms other than the anemia or mild icterus, and upon examination splenomegaly, increased fragility and spherocytosis are found. No two patients may have the same group symptoms. The jaundice is not very deep. The icteric index is seldom more than 40. The urine is deeply colored but the color is due to urobilin and not bilirubin. In congenital hemolytic jaundice the stools are normal in color which distinguishes it from obstructive jaundice.

Acute exacerbations of the disease are described as crises. Lippman states that crises are not frequently reported in children and are usually overlooked. Mandelbaum reports an initial hemolytic crisis in a man aged 75 with all the diagnostic signs in whom a splenectomy was performed followed by recovery. The onset may be rapid with weakness, pain in the upper abdomen, fever from 100 to 104°, nausea and vomiting. The weakness may increase to prostration and coma. The jaundice deepens and upon examination the red cell count is found to be as low as one million. The smear is found to contain immature red and white cells. The resistance of the red cells to hypotonic saline is reduced. The tenderness is due to a congestion of the spleen. Patients in crises must be given repeated transfusions besides general therapeutic measures so that splenectomy may be performed and when the anemia cannot be satisfactorily handled, emergency spenectomy has been resorted to with recovery.[1, 3, 6, 8]

Cholecystitis and cholelithiasis are frequent findings in long standing cases of hemolytic jaundice. Ashby reports finding two gall stones in a child age 14 months upon whom he performed a splenectomy. In this case the gallbladder was not removed but the child's mother had had a splenectomy and cholecystectomy for gall stones. Sharpe states that gall stones occur as a complicating factor in 63 per cent of cases and the calculi are the pigmented type. It is generally believed the increased incidence of gallbladder calculi is due to the increased hemolysis. In the normal blood, hemolysis usually begins in salt solution of 0.44 per cent and is complete at 0.36 per cent. In chronic cases, the hemolysis may begin at 0.6 or 0.7 per cent and may even be complete at 0.7 per cent. The increase in the amount of free hemoglobin passing through the liver results in an increased output of pigment which becomes deposited in the gallbladder.[6, 10, 11, 12, 14]

Another occasional observation seen in chronic hereditary jaundice is a peculiar osseous change noted in thickening of the frontal and occipital bones which Cooper has described. He noted that the bones of the cranium as well as elsewhere showed a dense cortex. This thickening, he believes, is due on the one hand to the active hyperplasis of the bone marrow and formation of new bone and on the other to the exhaustion of the overstimulated marrow and replacement of the degenerating cells by fibrous tissue. This deformity of the skull gives to some patients a mongoloid facies as was noted in the boy recorded in this paper. This mongoloid appearance has also been seen in erythroblastic or Mediterranean anemia and in sickle cell anemia and hence is not pathognomonic.[15]

Chronic indurated ulcers of the leg have been described as associated with chronic hemolytic jaundice which were intractible to treatment and only were healed after splenectomy.[16]

It is universally agreed that splenectomy offers the only permanent relief of the symptoms. It should be recommened even in the latent or symptom-free cases because of the potential danger of a superimposed crisis. It is recognized that during an acute crisis, every effort should be made to pre-

pare the patient for operation by means of transfusions and chemotherapy. There have been reports of splenectomy being performed in the acute phase wherein every effort to put the patient in suitable shape were unavailing and splenectomy had to be done with uneventful recovery.

Although it is generally stated that following splenectomy the clinical signs and symptoms do not reappear, this must be doubted because the tendency to increased fragility is still present and the spherocytosis remains. Splenectomy does not change these. Patients continue to show mild degrees of jaundice and fatigue. At times urobilin is found in the urine. Crises may not be as frequent but they do occur and are explained away by declaring that the other lymphoid tissues have taken over the phagocytic activity of the spleen.

CASE NO. 1

W. H., a white male aged 25, was first seen on April 10, 1934, with chief complaints of jaundice and weakness.

For the previous four weeks he had been having attacks of precordial pains with palpitation. His legs would become weak and he would break out in cold sweats. The appetite had become poor. The bowels were regular and normal. No blood was seen in the stools. His weight has been constant. For a long time he has noted that he was jaundiced and this jaundice, which was not very intense, would vary from time to time. He never noted any blood in the urine, although the urine has been very yellow at times. He sleeps poorly.

The past history revealed he had been having these weak spells with jaundice since the age of 13, and he was also subject to tonsillitis.

He is married; wife living and well; one child living and well. One premature child who died with jaundice. See chart of family history.

Physical examination reveals a thin, slightly icteric white male who appears definitely sick. The sclerae are yellow but not deeply so. The head, ears, nose are negative. The mouth shows recent wounds from dental extractions. There are several teeth left and these are very badly decayed. The gums are swollen and markedly pyorrheic. The skin is pale lemon yellow color. Temperature 99.6, pulse 96, respirations 20. The heart is normal in size and no murmurs are detectable. The lungs are negative throughout. The skin of the abdomen reveals a costal varicosity of the spider burst type. The spleen is enlarged. It extends upwards to the eighth rib in the midaxillary line and anteriorly to the left mammary line and downward to the crest of the ilium. The edge is round and the notch is palpable. It is freely movable. The liver edge could not be felt. No other masses are palpable. The lymph nodes are not enlarged.

Laboratory reports: Urine—yellow, clear, acid, sp. gr. 1.025, no albumin or sugar present. Urobilin 3 plus. Microscopic—few hyalin casts. Blood—hemoglobin 70 per cent; red blood cells 3,216,000, white blood cells 10,000. Schilling index—B-O, E-O, M-1, J-2, St-4, S-58, L-35, M-O. Smear—many micro and macrocytes with polychromatia. Stools—soft greenish brown. No ova or parasites. Kahn—negative. Clotting time—three minutes. Icteric index 15.0. Sedimentation rate—3 in 60 minutes. Fragility test—complete hemolysis at 0.44 per cent NaCl.

A diagnosis of congenital familial jaundice was made and splenectomy advised but was refused for two years. During this period the patient was under constant attention. Numerous blood studies were carried out comparing the icteric index with the red blood cell count and the fragility tests in order to determine what would cause these crises. The only conclusion that appeared to explain this phenomenon was that the intake of large volumes of liquid seemed to increase the frequency of the attacks of feeling badly. As a result the patient was placed on a liquid restricting diet.

In December 1936 he went to the Mayo Clinic where he was examined and the diagnosis confirmed and splenectomy advised. The laboratory findings were essentially the same as those reported above.

Upon his return, operation was performed under ether and ethylene. Through a left rectus incision the spleen was easily mobilized and a mass ligature placed about the pedicle and the spleen removed. No difficulty was encountered. The spleen weighed four and a half pounds. Postoperative convalescence was uneventful and he was discharged in one week.

A section of the spleen was sent to Dr. Broders who returned the following report: Chronic splenitis with fairly marked increase in fibrous connective tissue, thickened capsule, marked decrease in number of Malpighian bodies with thickening and hyalinization of the vessels of those that remain. The picture was not that which we see most frequently with hemolytic jaundice. There was evidently more connective tissue present and a thickened capsule together with more destruction of Malpighian bodies than we usually see.

Since the operation he has continued to show varying degrees of icterus. The icteric index of the serum is still higher than normal and varies in amount from time to time. X-rays of the gallbladder on several occasions demonstrated no pathology.

CASE NO. 2

M. L. H., a white male aged 8, the son of Case 1, also had jaundice. The child was first seen at seven months of age, because of fever. At this

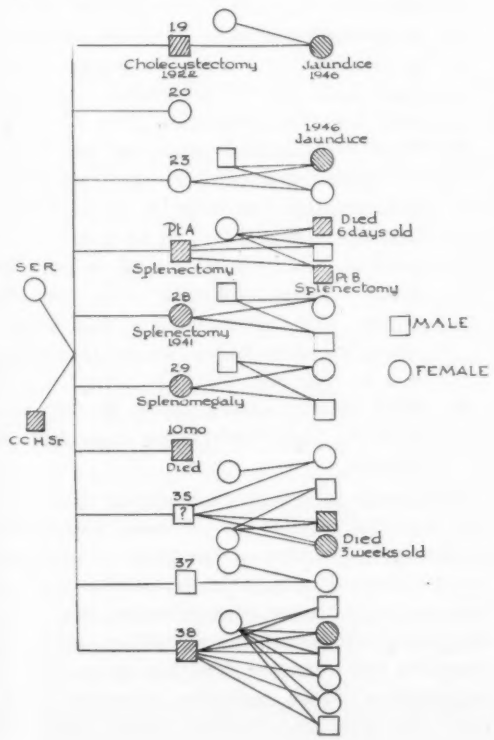
time it was noted that the child was almost milk white in color with a tinge of yellow. He was not in pain. The abdomen was distended and the superficial vessels were prominent. The spleen was enlarged and extended three finger breadths below the costal margin on the left. The liver was not palpable. There was no lymphatic enlargement. The facies was suggestive of a Mongolian type.

He was not seen again until four years later. At this time the spleen was found to be considerably larger. He was more definitely icteric. The urine did not contain any urobilin. At this time the hemoglobin was 60 per cent, red blood cells 3,700,000, white blood cells 10,400. Schilling index —B-2, E-4, M-5, J-1, St-0, S-16, L-72, M-O. On the smear the cells showed an aniso-poikilocytosis, achromia and several nucleated red blood cells. Fragility tests presented complete hemolysis at 0.44 per cent NaCl.

Again he was lost sight of for four years when he was again seen because of temperature 105°. He was pale and slightly icteric. The spleen had grown considerably larger. There had been attacks of pain in the abdomen with cramps. The stools were normal in color. The appetite had remained good. His weight was 59½ pounds.

The past history revealed he had had frequent attacks of abdominal pains with fever.

Family history—See chart.



Physical examination showed the skin to be pale and icteric. The mucous membranes of the mouth and conjunctivae had a watery appearance. The tonsils were large. No lymphatic enlargement of the neck, axillae or groin was present. The spleen was palpable to the umbilicus. The edge was rounded. The liver edge could not be felt. There was a soft mitral systolic and diastolic murmur present in the left second interspace which was considered to be hemic.

A diagnosis of congenital familial jaundice was made and as his condition was becoming progressively worse, the parents consented to operation. He was accordingly prepared for splenectomy.

Red blood cells 2,366,000 with marked microcytosis, white blood cells 7,900 P-52, L-42, M-6, hemoglobin 30.5 per cent or 5 grams. Fragility began at 0.44 per cent and was complete at 0.38 per cent NaCl.

He received 500 c.c. of whole blood every three days until his hematology was within normal limits and a splenectomy was performed on September 5, 1944. The spleen was easily mobilized through a left upper rectus incision. The pedicle was freed and a ligature place around it. A transfixion suture was likewise placed and the spleen removed. The wound healed per primam and his convalescence was uncomplicated. He was discharged from the hospital on the eighth day.

Since his operation, he has remained free from the former bouts of high fever but he still shows a tendency towards icterus at times. The facies no longer appears mongoloid. Whether this change has been due to growth or to the operation is hard to tell.

Pathologic report of Dr. J. M. Miles: The specimen is that of a spleen which measures 18 cm. long, 9 cm. wide, and 4 cm. thick. The cut surface is smooth and of a deep red color resembling that of raw liver. No pulp could be scraped from the cut surface. The microscopic section shows the spleen to be engorged with red blood cells causing the lymph follicles to appear small and decreased in number. The gross and microscopic appearance is that of the spleen of hemolytic jaundice.

SUMMARY

1. A report of the results of splenectomy in the treatment of congenital familial jaundice occurring in father and son, with a record of its appearance in three generations, is recorded.

2. A review of the pertinent features in the clinical, pathologic and surgical treatment of the disease is presented.

3. The course of the disease, while considerably improved by splenectomy, is not terminated thereby, but recurs in a milder

form intermittently, depending upon the water and salt intake.

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SADDLE BLOCK ANESTHESIA IN OBSTETRICS*

A PRELIMIARY SURVEY OF 50 CONSECUTIVE CASES**

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AND
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NEW ORLEANS

The term "saddle block" is employed to designate a low spinal anesthetic, with the effects confined chiefly to the perineal region. It has been used for several years in proctology and in cystoscopy. Adriani suggested its use in obstetrics in New Orleans and has published several valuable contributions based on his experience.

We have resorted to this method of analgesia with increasing frequency in the past two years, and in this preliminary report we wish to present our experiences in one hospital during the past six months. We feel that an analysis of consecutive cases in one institution with uniformity of nursing care, gives a better opportunity in evaluating the results. In this period of time, we delivered 98 patients vaginally in this hospital; in 50, saddle block was used, and in 48 it was not employed.

The technic advocated by Adriani has been modified in this series and the following method was used:

Necessary drugs:

1 ampoule 3 c.c. 10 per cent glucose.
1 ampoule 2 c.c. containing 10 mg. Nupercaine (1/200)
1 ampoule adrenalin (optional)
1 ampoule 1 c.c. 5 per cent ephedrine with 1 per cent procaine.

1. Wash 5 c.c. syringe with 1 c.c. 10 per cent glucose and repeat, using another 1 c.c. (this leaves 1 c.c.).
2. Wash same syringe with 1 c.c. Nupercaine.
3. Now mix remaining 1 c.c. 10 per cent glucose with 1 c.c. Nupercaine (5 mg.) and ½ c.c. adrenalin (this is used for spinal injection).
4. With ephedrine—procaine solution, infiltrate skin of back and make a lumbar puncture with the patient sitting up. Use either L 3 or L 4.
5. Insert spinal needle, and when in canal, inject solution (3) mixed above, just after patient has completed a contraction. Inject at a rate of 1 c.c. per second.
6. Keep patient sitting up for 90 seconds then lie flat, with head elevated on pillows.

Analgesia is established within three to five minutes, and is manifested chiefly by a complete abolition of the pain of uterine contractions. If properly given, the paresthesia extends to, or slightly below the level of the umbilicus, associated with partial or complete loss of motor function of the lower extremities. Most patients, however, can move the toes and flex the knees. The ef-

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**From collected cases of Dr. E. L. King, Dr. John S. Herring and Dr. Isadore Dyer.

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fects persist from two to four hours, frequently longer, so that the majority do not require additional gas anesthesia for delivery. At times there is a temporary lessening of the force and frequency of the uterine contractions, but this effect soon wears off, unless the "block" is administered too early in labor. There is a tendency for the presenting part to recede somewhat in the birth canal. Voluntary urination is inhibited, necessitating careful vigilance of bladder retentions and catheterization during labor. Due to the relief of pain, the patient is not aware of the uterine contractions, which are soon back to normal and hence does not use her abdominal muscles as aids to delivery, unless coached by the physician or by a nurse. There is relaxation of the structures of the pelvic floor and vagina, (and to some extent the cervix is involved), and this relaxation, together with the diminished voluntary expulsive force, tends to retard moulding of the head and anterior rotation of posterior occipital positions. This retardation is in direct ratio to the degree of cephalo-pelvic disproportion, which is also the case to a less degree when saddle block is not used. Due to the "fortification" of the anesthetic mixture with adrenalin and the administration of ephedrine in the skin wheal, little or no fall in blood pressure is noted. Should this develop, it is early and transient: 10 to 15 per cent of the patients develop nausea and vomiting within the first hour; the mechanism of this is not well understood.

The analgesia should be administered when labor is well established, with satisfactory contractions occurring two to four minutes apart; the cervix should be at least 75 per cent effaced, and 6 to 8 cm. dilated in a primigravida and 4 to 5 cm. dilated in a multigravida. The presenting part should be at the level of (or below) the ischial spines, and definite progress should have been observed during the hour before administration. If necessary, preliminary drug analgesia is administered until the proper stage is reached.

The 50 patients forming the basis of this report comprise 36 primigravida and 14 multigravida. In 14, there was noted cephalo-pelvic disproportion of 100 c.c. or more at the mid-plane. All babies presented by the vertex; in 20 the occiput was anterior when the block was administered, in 23 it was posterior, and in seven the saggital suture was lying transversely. At delivery there were 28 anterior positions, seven transverse, and 15 persistent posterior positions. These later were rotated by forceps. Forty-nine of the 50 cases delivered by forceps, of which 37 were low and 12 were midforceps; four done because of fetal distress, four because of deep transverse arrest, four because of persistent occipito-posterior positions. There was no fetal or maternal mortality. There were three cases (6 per cent) of postpartal complications, namely, one case each of mastitis, pulmonary atelectasis and retained secundies. None of these could be attributed to the saddle block. There was no postpartal hemorrhage. The analgesia was satisfactory in every patient. The duration averaged three and a half hours. In three patients the block was administered too early, due to error in estimating cervical dilatation; their labors stopped for several hours. In one of these patients the block was later repeated with satisfactory results. In seven patients, labor lasted four or more hours after the block was administered; 40 were delivered in less than four hours. Approximately 30 per cent required a light gas anesthesia at time of delivery, but retained enough analgesia for perineal repair without gas.

Forty-five babies cried immediately at birth. Five required resuscitation, but none was deeply asphyxiated. In one instance, fetal distress was present prior to delivery, the cord was found to be twice around the neck and rather tightly drawn. We believe that the asphyxia in the other four babies was due to the administration of analgesic drugs prior to the saddle block, plus the use of gas anesthesia at the time of delivery.

Postpartally, we find that 15 patients required catheterization once at the end of

eight hours. Two of these were also catheterized again at the end of the second eight hours. Two other women had persistent urinary retention, and were treated by the use of indwelling catheters; one for 24 hours, one for three days. There was no incidence of cystitis. We have learned that it is very important that the bladder be completely emptied by voiding not later than eight hours after delivery. It is essential that the nursing staff be instructed as to the importance of this detail, otherwise overdistension of the bladder with subsequent bladder atony and retention is almost inevitable.

POINTS TO BE STRESSED

1. Saddle block anesthesia is to be used only in a hospital and should be given by a trained anesthetist. It is applicable to about 50 per cent of patients.

2. Many primipara will go entirely through the first stage of labor without need of analgesia; many multipara have such rapid labors that this anesthesia cannot be used. It definitely should not be used too early in labor.

3. Labor must be well established, there must be cervical effacement and dilatation or cessation of labor will result.

4. It should not be regarded as an analgesia for the early part of the first stage of labor. Definite retardation of moulding of the fetal head, rotation of posterior positions and descent, in patients with moderate to marked cephalo-pelvic disproportions can be expected when the block is used.

5. It is important to keep the bladder emptied during labor, and watched for the first eight hours after delivery.

6. Saddle block anesthesia is better than heavy sedation, and gas anesthesia for delivery, as far as the baby is concerned.

6. Although there is a tendency for spontaneous rotation to be retarded, relaxation of the soft parts facilitates forceps procedures.

7. If saddle block anesthesia is contemplated, it is essential that the obstetrician be sufficiently trained to evaluate the progress, and changes during labor, have sufficient knowledge of cephalo-pelvic relationship and be prepared in any event to conduct a skillful forceps delivery.

THE HUTCHINSON MEMORIAL CANCER DETECTION CLINIC

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Although cancer has been recognized as a disease for many centuries, it was not until 1802 that the first cancer society was established. A group of English physicians made an attempt to understand more of this disease by circulating a questionnaire to the profession in the hope that important observations would aid in solving the cancer problem. Unfortunately nothing seems to have been accomplished.[1] In Koenigsberg, East Prussia, a physician by the name of Georg Winter established an educational campaign in the 1890's to acquaint women with the early symptoms of cancer of the uterus and to advise them to seek medical care when these symptoms appeared.[2] A similar program was initiated in this country in 1914 when the American Society for the Control of Cancer was founded. From the beginning this group has publicized the signs and symptoms of early cancer in an attempt to arouse the public awareness of this disease. It is because of programs such as this that cancer is no longer considered to be a shameful disease, but one that may be discussed freely with the physician and others. The trend of the educational effort now is away from teaching the symptoms of early lesions to that of advising periodic health examinations, for it is well known that when patients notice symptoms the disease already may be advanced too far to hope for successful cure.

In an attempt to discover early lesions, Dr. Elise L'Esperance, of the New York Infirmary for Women and Children, established in 1937 the first clinic designed to perform periodic complete health examinations on women who had no symptoms of cancer. The first series reported by that clinic[3] showed the incidence of malignan-

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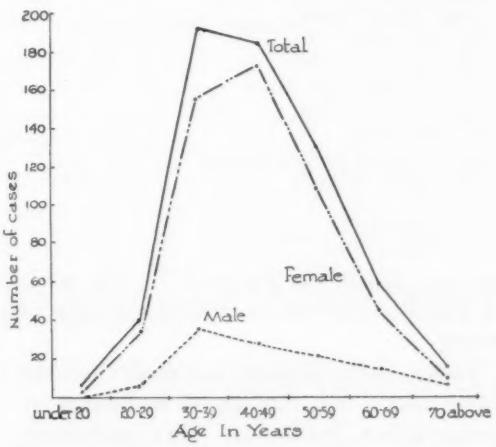
cies to be 7.6 per cent of 1800 women examined. Most of the tumors were early and, therefore, offered a good prognosis with proper treatment. In 1938 a clinic was founded by Dr. Catharine Macfarlane and others at the Woman's Medical College of Pennsylvania to determine the value of periodic pelvic examinations in the discovery of early lesions of the female genital tract. The intention was to find presumptive, not definitive, evidence of cancer.[4] Because of the excellent results of these clinics, others of similar pattern have been organized throughout this country.

On March 1, 1946, a cancer detection clinic was opened at the Hutchinson Memorial Clinic of the Tulane University School of Medicine, under the auspices of the Orleans Parish Medical Society and the American Cancer Society. This clinic has recently completed one year of operation and it is believed that the findings are of interest and may stimulate other groups to establish similar clinics.

The clinic staff consists of three internists, two gynecologists, one surgeon, one or two nurses, a secretary-receptionist, and a laboratory technician. Because the facilities of the Hutchinson Clinic are available, it is unnecessary to provide separate apparatus for x-ray, proctoscopic, or other more detailed examinations. The clinic operation is governed by standards established by the American Cancer Society, so that biopsies or therapeutic measures are not performed in the clinic, but by the physician of the patient's choice. No selection has been made as to sex, color, or age, but an attempt has been made to exclude any one who is under treatment for cancer or who has definite symptoms of this disease. It is intended that repeat examinations will be accomplished at intervals of approximately six months. If the patient feels that he is able to pay, a contribution of five dollars is made, which amounts to approximately one-fifth of the total cost of the examination. The deficit is financed by funds from the American Cancer Society.

The clinic is open for two hours twice weekly and nine patients are seen each day. This means that the internist can average forty minutes with each patient. The gynecologist has found it necessary to spend at least twenty minutes on each examination. This includes a gynecologic and obstetric history, bimanual pelvic, colposcopic, and rectovaginal examinations and the taking of vaginal and cervical smears to be stained by the Papanicolaou method. The surgeon is the last to see each patient and, in addition to examining the breasts, may do any other procedures requested by the internist. In some instances it is necessary to spend more time if the history or physical findings suggest that a malignancy is present.

During the first year 636 patients were seen for the first time. Of these, 597 were white, 39 colored, 527 female, and 109 male. It is interesting to note that there were more patients in the fourth decade than in the fifth decade (fig. 1). This would



seem to indicate that the public has become aware that cancer is not necessarily a disease of later life.

Of this group there were 77 patients with 98 lesions considered to be probable cancer, possible cancer, or precancerous, according to the impression of the examiner. These are tabulated by region involved (table 1). In addition, there were 23 women who had vaginal or cervical secretions which were positive for cells suggestive of malignancy when stained by the Papanicolaou method. Nine of these patients had other lesions and

TABLE 1

Lesion	Cancer		Precancerous	Total
	Probable	Possible		
Skin and appendages				20
Basal cell carcinoma	3	1		
Squamous cell carcinoma	1			
Leukoplakia of lip			2	
Intraductal papilloma of breast			2	
Carcinoma of breast	3	8		
Respiratory system				3
Bronchogenic carcinoma	1			
Laryngeal carcinoma		2		
Hemic and lymphatic systems				4
Hodgkin's disease		1		
Parotid carcinoma		1		
Leukemia		2		
Digestive system				6
Carcinoma of stomach		1		
Rectal polyp			3	
Abdominal mass		2		
Endocrine system				5
Thyroid carcinoma	2	3		
Genitourinary system				60
Vestibular leukoplakia			9	
Carcinoma of vulva		2		
Carcinoma of clitoris		1		
Cervical polyp			1	
Cervical leukoplakia			18	
Cervix, suspicious lesion		6		
Cervical carcinoma	4	14		
Ovarian tumor		3		
Carcinoma of uterine fundus		1		
Carcinoma of testis		1		
Total	14	49	35	98

are included in the group of 77. The other 14 patients showed no clinical evidence of cancer.

Twenty-eight patients had more than one lesion which was considered malignant or premalignant (table 2). This adequately demonstrates that it is necessary to perform a complete examination rather than to be satisfied by the discovery of one lesion.

TABLE 2
MULTIPLE LESIONS

	Number of Patients
Possible and probable	2
Possible and premalignant	12
Possible and positive Papanicolaou stain	2
Probable and premalignant	2
Probable and positive Papanicolaou stain	4
Premalignant and positive Papanicolaou stain	2
More than one possible	1
More than one probable	0
More than one premalignant	3
Total Number of Patients	28

The physician designated by the patient was sent a form on which he was asked to indicate further diagnostic procedures performed by him and his final diagnosis. The response has been very favorable, for 78, or 86 per cent of the follow-up forms have been returned. Ten cases of microscopically proved malignancies have been reported. An additional case was given a final diagnosis of carcinoma of the breast, but was considered inoperable by the physician. This total of 11 malignancies is an incidence of 1.73 per cent in all patients examined. Ten of these patients came from the group which had lesions considered as probable cancer.

TABLE 3

MALIGNANCIES

Color	Sex	Age	Clinical Diagnosis	Comment	Pathologic Diagnosis
W	F	72	Suspicious lesion of nose, and positive	Nasal lesion excised; refused D and C or	Basal cell carcinoma
W	M	45	Papanicolaou	biopsy of cervix	of nose
W	M	58	Squamous cell carcinoma of thigh	Excision biopsy	Early epidermoid carcinoma
C	F	48	Bronchogenic carcinoma	Died	Primary bronchogenic carcinoma
			Cervical carcinoma and positive Papanicolaou	Biopsy; radium therapy	Squamous cell carcinoma
W	F	65	Carcinoma of breast	"Lesion inoperable"	Carcinoma of breast
W	M	32	Basal cell carcinoma of nose	Excision biopsy	Basal cell carcinoma
W	F	64	Carcinoma of cervix and positive Papanicolaou	Biopsy; radium	Carcinoma of cervix, Stage III
C	F	34	Carcinoma of cervix and positive Papanicolaou	Biopsy; radium	Carcinoma of cervix, Stage II
W	M	58	Basal cell epithelioma of temple	Excision biopsy	Basal cell epithelioma
W	F	67	Carcinoma of breast; leukoplakia of vulva	Radical mastectomy; vulva not biopsied	Scirrhous carcinoma; no lymphadenopathy
W	F	47	Possible carcinoma of the cervix	Biopsy; radium	Squamous carcinoma of cervix, Stage II

The findings in the remaining 67 patients who were followed are of interest. Thirteen went to their physicians, biopsy or a surgical procedure was done, but no evidence of malignancy was found. Eighteen patients did not report, so the diagnosis has not been established. Therefore, out of 60 patients who reported to a physician, 36, or 60 per cent, received no further diagnostic procedure and the final diagnosis is unknown. A brief summary of representative cases is given in table 4. In contrast

TABLE 4

LESIONS INADEQUATELY TREATED

Clinical Diagnosis	Clinical Description: Treatment Refused*	Treatment after Referral
Possible carcinoma of cervix	Cervix hardened and cystic with small granulation at exteral os	D and C recommended; patient refused
Leukoplakia of vulva; possible carcinoma of vulva and cervix	Rock hard mass in right labium majus underlying an area of leukoplakia. Polypoid lesion of cervix	Patient refused treatment
Probable caricinoma of thyroid	5 x 3 cm. mass with several stony hard areas	Patient refused treatment. Had not the time or money to be treated
Carcinoma of the uterine fundus; nodules in breast	Endocervix widely patent; uterus enlarged; three hard nodules in breast; biopsy indicated	Patient refused treatment
	Patients with Positive Papanicolaou**	
Positive Papanicolaou	Cervix appeared normal but bled after passage of sound	No biopsy or D and C
Positive Papanicolaou; endometrial polyps	Endocervix dilated with small cluster of endometrial polyps	No biopsy or D and C; "observation"
	Patients Inadequately Treated***	
Possible carcinoma of breast	Hard mass which did not transilluminate and felt partially fixed to surrounding tissue, but not to skin. Excision and frozen section indicated	No biopsy

(Continued on Next Page)

TABLE 4—Continued

Clinical Diagnosis	Treatment Refused*	Treatment after Referral
Possible carcinoma of cervix	Marked laceration; several friable bleeding areas on anterior lip; hospitalization indicated	Patient examined but no biopsy done
Carcinoma of cervix, Stage I; leukoplakia of cervix	Cervix 3 x normal size, cystic and red; contact bleeding	Biopsy suggested but patient did not return
Leukoplakia of vulva	Same, with obliteration of interlabial folds; splitting of fourchette on gentle examination	No biopsy

*Two similar cases not included in table; **five similar cases not included in table; ***18 similar cases not included in table.

to this group are the 24 patients who received adequate examination; 11, or 45.8 per cent, had proved cancer.

Had there been no cases of cancer in this series, it is felt the operation of this clinic has been justified for the many non-malignant, but nevertheless serious, conditions which have been discovered. Many of these are amenable to treatment. The more important are listed in table 5.

TABLE 5

MISCELLANEOUS CONDITIONS

1. Diseases of the body as a whole
   - Possible rheumatic fever 1
   - Nutritional deficiency 7
   - Amebiasis 1
2. Diseases of the integument and associated tissues
   - Sebaceous cyst 15
   - Lipoma 14
   - Papilloma 21
   - Dermatitis venenata 5
   - Cystic breast disease 86
3. Diseases of the musculoskeletal system
   - Arthritis—all types 30
   - Ganglion 2
4. Diseases of the respiratory system
   - Bronchitis 3
   - Bronchial asthma 2
   - Tuberculosis—active 3
5. Diseases of the cardiovascular system
   - Hypertensive cardiovascular disease 11
   - Arteriosclerotic heart disease 9
   - Rheumatic heart disease 4
   - Hypertension, cause undetermined 63
   - Varicosities, leg 59
   - Thrombophlebitis, leg 2
6. Diseases of hemic and lymphatic systems
   - Anemia (less than 75 per cent hemoglobin) 88
   - Obstructive parotitis 1
7. Diseases of the digestive system
   - Splenomegaly 4
   - Hepatomegaly 34
   - Gallbladder disease 8
   - Rectal polyp 6
   - Hernia—all types 24
   - Anal fistula 5
   - Hemorrhoids 146
   - Peptic ulcer 4
8. Diseases of the urogenital system
   - Urethritis, purulent, female 1
   - Pyelonephritis 2
   - Cervical erosion, severe 40
   - Cervical polyp 19
   - Possible endometriosis 6
   - Uterine prolapse 33
   - Leiomyomata of uterus 72
   - Ovarian cyst 26
   - Cystocele 188
   - Rectocele 159
   - Early pregnancy 3
9. Diseases of the endocrine system
   - Diffuse thyroid hyperplasia 9
   - Possible thyrotoxicosis 4
10. Laboratory
    - Urine—voided
      - Albumin 10
      - Sugar 13
      - Casts 13
      - Red blood cells 72
    - Positive Kahn and/or Wassermann 5
    - Lymphocytosis 1

COMMENT

The purpose of the cancer detection clinic is to influence individuals, both medical

and non-medical, to accept periodic health examinations as the best available method for the control of cancer. The response of the public has been excellent and has enabled clinics such as this to demonstrate that the time and effort expended are extremely productive of early lesions of malignant nature. However, such measures are not limited to clinics of this type, but may be employed by the individual practitioner. It is imperative that he be suspicious of apparently benign lesions, for physicians have told patients that such lesions are no cause for alarm and that a re-examination will be done at a later date. During this period of procrastination the lesion may advance so that only palliative rather than curative therapy can be instituted. Episodes such as this are not uncommon, for it has been shown in this series that 60 per cent of all patients with lesions suspected of being cancerous, who have been referred from this clinic to their physicians, have received inadequate treatment or none at all.

SUMMARY

1. The Hutchinson Memorial Cancer Detection Clinic has recently completed one year of operation.

2. Six hundred and thiry-six well patients were seen for the first time.

3. Ninety-one patients had lesions suspected of being cancer.

4. Thirteen patients had lesions which were suspected of being cancer, but when biopsy or surgical procedures were done they were proved to be benign.

5. Eleven patients had proved carcinoma.

6. Sixty per cent of patients who reported to their physicians with suspicious lesions did not receive the benefit of further diagnostic procedures.

7. Periodic complete examination of all individuals is the only method by which early cancer may now be detected.

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IMPOTENCE*

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Although a wealth of literature has accumulated related to the psychologic, psychiatric, psychosomatic, and urologic problems concerning modern warfare, there has been negligible attention paid to the subject of impotence. Impotence, a matter of considerable personal concern to the patient, promises to be of major importance among veterans of World War II if the experiences of the writer are a reasonable indication of the prevalence of this condition.

This report is based upon my military experience with 22 men (16 officers and six enlisted men) who were referred to me because of impotence. The youngest patient was 20 years old; the oldest patient was 33 years old. Without exception, all of these men were in excellent physical condition.

All of the patients presented histories of having been potent prior to going overseas. Three of the patients observed a loss of their potency while they were overseas. Many of these men had ascribed their impotency at that time to the fear of acquiring a venereal disease and had dismissed the matter as being a sound commentary on their personal background and will power. Fourteen of the entire group had been relieved from active duty at some time for operational fatigue but this condition had been transient.

One or more reasons for his impotence were named by each of the patients. These were as follows:

1. Diets deficient in fresh vegetables, fruit, meat, eggs, and milk caused testicular atrophy (10 cases).

2. Inadequate oxygen intake during high

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*Read before the Orleans Parish Medical Society, March 10, 1947.

altitude flying caused the testicles to die (six cases).

3. Taking atabrine tablets both for the prevention and treatment of malaria destroyed the testicles (five cases).

4. Testicles wasted away from disuse because there was no female companionship available at their overseas base or avoidance of sexual relations because of fear of acquiring a venereal disease (four cases).

5. Guilt complex because of illicit sexual relations while stationed overseas (four cases).

6. Toxic degeneration of the testicles due to excessive alcohol imbibition while overseas (three cases).

7. Extreme state of nervousness during missions and other hazardous situations associated with combat duty (two cases).

8. Atrophy of testicles produced by injurious sun and cosmic rays found only at high altitudes (two cases).

9. Guilt complex because of having acquired a venereal disease while stationed overseas (two cases).

10. Pressure necrosis of the testicles brought about by wearing a parachute harness which fitted snugly in the crotch (one case).

11. Deterioration of testicles brought about by the extreme heat while on tropical service (one case).

12. Deterioration of testicles brought about by the extreme cold during missions in the winter (one case).

13. Malaria caused testicular atrophy (one case).

14. Dysentery caused testicular atrophy (one case).

15. Religious complex. This man had promised God that he would never resort to any secular pleasures (in which he had listed sexual relations) if he should ever return safely from combat duty (one case).

It soon became obvious that these patients presented problems requiring psychotherapy. Many medical writings emphasize the organic aspect of this condition. In my experience, this approach has tended to avoid the basic issue, namely, that impotence is a symptom of aberrant functional or organic changes and not a disease *per se*. In cases of functional etiology, a prolonged course of endocrine therapy, oral medication, urethral instrumentation, and prostatic massages, when these are prescribed as specific treatment, may serve to substantiate the first impression of the patient, namely, that the structural elements of his virility have suffered a deterioration. Such therapeutic extremism is facetiously exemplified by Crookshank who writes about the response of a physician to a woman who was crying. A diagnosis of "paroxysmal lacrimation" was made and a host of antiseptic solutions, mydriatics, and dietary restrictions were prescribed. Should these measures fail, surgical removal of the tear glands was suggested.

At the same time, it was realized that the guilt would be no lighter to adopt the other extreme and regard all cases of impotence in combat returnees as being of functional etiology. No doubt was ever entertained but that functional and organic elements contributed simultaneously to many of the cases. In this connection, we never regarded ourselves as adequately competent to determine which came first.

Menninger offers some elucidation on impotence by suggesting that the inhibition of sexual function and pleasure is another form of functional focal suicide elicited by an unconscious attempt to solve unconscious emotional conflicts.

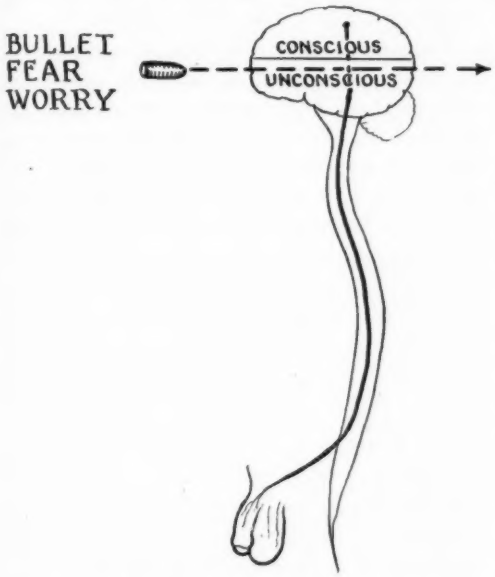
This concept has constituted the premise upon which the following treatment has been based.

The first step in the treatment has been to encourage the patient to discuss at full length his familial, social, and educational background. He is then asked to advance any theories that he might have as to the causative factors responsible for his impotency. The essential factors gleaned from this conversation are reviewed and an attempt is made to explain the significance or fallacy of the data point by point. Wherever possible, sketches are drawn to simplify the presentation.

Medical terminology and discourses on

the various schools of psychologic thought were completely avoided. Some of the points contained in the discussion with the patients were of unproved scientific substantiation. Nevertheless, this approach enhanced the simplification of the discussion as well as the ease of comprehension on the part of the patient.

For example, a favorite diagram has been a sketch of the brain and spinal cord showing nerves running to the penis which are responsible for making an erection possible.



The brain is then divided into an upper and lower half, the former labeled conscious mind or desire and the latter labeled unconscious mind or unconscious desire. The patient is then told that so long as the unconscious mind rebels against sexual relations, the circuit is broken between the conscious desires and those nerves responsible for potency. This is further exemplified by stating that doubt as well as fears can cloud the unconscious desires and thereby produce impotence. By bringing to light all the doubts and fears which inhabit the unconscious mind, the latter is purged of the inhibiting factors responsible for his potency. The final issue is therefore not whether he is capable of the sex act but whether he desires to have sexual relations at the time.

A favorite, even if quasi-scientific, explanation of the fallacy of the concept of testicular atrophy due to oxygen deprivation or various drugs or environmental factors should be put forth as follows:

"The more complex an organ and the more important it is for the maintenance of life, the more does it require a perfect environment such as oxygen, sufficient food, and absence of injurious chemicals to survive. For example, the brain is more complex than the testicles; you can exist perfectly well without testicles but, of course, not without your brain. Therefore, the brain requires more oxygen to remain intact than the testicles (or the brain is more susceptible to the injurious effects of atabrine that the testicles, etc.). It is therefore reasonable to deduce that if the oxygen concentration, which occurred in high altitude missions, was so low as to cause destruction of your testicles, then your brain would surely have broken down before the former had occurred. You would be dead now." (The same line of reasoning would be applied to the deleterious effects of inadequate diets, cosmic rays, disease, and other environmental factors.)

Atrophy of disuse would be explained away by emphasizing the autonomic function of the testicles regardless of sexual activity. Thus, "The testicles do not degenerate from lack of sexual activity any more than do the eyes waste away from failure to read."

One of the proofs offered as evidence that testicular degeneration had not occurred would be presented in this vein. "The testicles do not have for their exclusive purpose to permit you to have an erection at will. Among other things, they are responsible for your masculine characteristics. The fact that you must shave at least every other day, that your voice is easily identified as a male one, that your breasts have not enlarged, and that you do not walk or gesture like a woman is substantial evidence to prove that your testicles are still on the job."

When urologic treatment was adminis-

tered, an attempt was made to impress the patient with the fact that the treatment was supportive and not specific. The patient would be told that the treatment was designed "to start the ball rolling"; thereafter, he would be on his own. An analogy would be drawn to the case of a man who has been ill in bed for a long time and is relearning how to walk. As this man regains his footing, the lending hand is withdrawn.

The average duration of treatment was ten weeks, the range being from three to twenty-four weekly sessions.

RESULTS

There were three failures in this series of patients. According to the reasons named by these men for their impotence, they were as follows:

1. Guilt complex because of illicit sexual relations while stationed overseas.
2. Extreme state of nervousness during missions and other hazardous situations associated with combat duty.
3. Religious complex.

Nineteen of this group enjoyed a return of their potency. To the best of my knowledge, there was no recurrence of their previous complaint.

CONCLUSION

Impotence poses a psychosomatic problem which falls partially within the province of responsibility of the urologist. Impotence should be regarded as a symptom rather than a syndrome or disease. Resorting to various endocrine preparations, central nervous system stimulants, and posterior urethal instillations has afforded us results which leave much to be desired. Psychotherapy is the privilege and obligation of all medical practitioners. One might follow the course of least resistance and refer the patient to a psychiatrist without further ado. To the physician who undertakes the task of treating a case of impotence, the promise for a satisfactory result is an eternally grateful patient. But of greater consequence is the fact that the urologist establishes himself as a specialist whose professional horizon is not obscured by a chromium-plated therapeutic armamentarium.

RAPID POSTOPERATIVE MOBILIZATION

VINCENT D'INGIANNI, M. D.
NEW ORLEANS

Rapid postoperative mobilization is no longer looked upon as a radical trend in surgery, and the prejudice against its exponents is beginning to disappear. It has been 48 years since Ries[1] mentioned his practice with early mobilization in his treatise. Since then the two most outstanding figures in this field have been Leithauser[2] of Detroit and Zava[3] in Australia.

Ever-increasing numbers of reports, both in this country and abroad, are eulogizing this form of postoperative treatment. The surgeons of World War II saw the necessities of war make ambulatory patients of thousands who would have been kept in bed had they been at home. These doctors who saw their patients rise early with no ill effects, have returned to civilian practice enthusiastic supporters of rapid mobilization. The laity as well as members of the profession are showing interest by asking questions. Popular magazines are running feature articles in lay terms entitled: Get Up and Get Well, Get Out Of Bed, Bed May Be Bad For You. There is a great deal of talk about this subject. Is it much ado about nothing? Let us reexamine the facts so that we may be better prepared to pass judgment on this so-called new trend in convalescence.

In order to discuss this subject it is necessary to understand the altered physiology brought about by prolonged immobilization after operation. In other words, what takes place when a patient remains at complete rest in bed for several days after operation?

One noteworthy change in physiology which is a frequent finding after operation can be classified as a respiratory complication—the inability properly to aerate the lungs. Due to the limitation of motion while reclining, there is necessarily insufficient expansion of the chest, and the inability to

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*Read before a meeting of the Orleans Parish Medical Society, April 14, 1947.

raise sputum. When the sputum thickens it acts like a plug in each bronchiole. This situation tends to diminish the vital capacity. The hemoglobin cannot be fully oxidized. Organism growth is promoted, and pneumonitis is favored.

Another physiologic change which takes place as a result of prolonged bed-rest is the diminution of the circulation in the extremities. Circulation can be quickened only by muscular contractions, which act as pumping stations of the blood. It has been shown that bicycle-like motions of the lower extremities enhance the blood flow by several hundred per cent.[4] Stagnant blood in the extremities promotes clots; resulting phlebothrombosis is often seen in patients confined to absolute bed rest. This occurs most frequently in those patients who have had some intima damage, especially in the veins that have been dilated from some previous disease. When phlebothrombosis or thrombophlebitis has already occurred the chances of pulmonary emboli increase.

Since muscle tone is maintained by constant use, immobilization causes atrophy and loss of tone; and circulation rate slows down accordingly.

It has been the custom to keep patients in bed until the eighth or tenth day after operation because of the "unhealed wound." However, statistics[5] show that wound healing is not accomplished until the twelfth or fourteenth day in those wounds closed with surgical gut. Therefore, the eighth to the tenth days would seem the most dangerous time to rise, since the sutures are at their weakest and the closing is usually not yet accomplished. To rise on the second or third day when the sutures are still strong seems more cautious to the advocates of rapid mobilization. Indeed, extensive experiments with wound healing have been carried on by Newburger.[6] Rats having abdominal incision were studied to determine how much pressure was required to rupture their incisions. One group was immobilized after the incisions were made; the other group was exercised on a treadmill. It was found that the incisions of the immobilized rats rupture at a much lower pressure than those of the rats that ran the treadmill after the incisions were made. In other words, healing goes on at an excellent rate in a state of motion. As for wound disruption, it seems in no way related to mobilization, since it occurs in patients mobilized and in patients non-mobilized. It seems that there is no single cause of wound disruption, but rather that many factors play independent roles in this unpredictable phenomenon of surgery; or it may depend entirely on the individual's response to foreign material.

Before leaving this topic it can be pointed out that among the 700 cases handled by me there has not been a single case of evisceration. Nor did Leithauser,[2] whose cases that were early mobilized number in the thousands, report having been confronted by this complication.

The inability to create a bowel movement or to void are two usual discomforts that accompany long rest in bed. Purgation and catheterization are unpleasant and often harmful. The reclining position is conducive to ileus, causing it to linger. And so on goes the list of reasons for abandoning long bed-rest after operation.

Let us now examine the other side of the picture: the results of rapid mobilization:

When a patient sits up alongside his bed six to ten hours after an operation he necessarily exerts himself, quickens his respiration and aerates the bases of his lungs. Motion causes a cough reflex and stirs the accumulated plugs of mucous in the bronchioles, thus diminishing the chances for atelectesis or patchy pneumonitis. Turning from side to side in bed does not accomplish this as does the upright position. Distention, probably due to swallowing air, is relieved by standing.

Vital capacity can only reach its maximum when a person stands upright and moves about; it is limited by the resistance offered to the back by the bed when a reclining position is assumed. Those having upper respiratory tract infection need not fear surgery nor general anesthesia, therefore, if they rise early and attain maximum vital capacity.

Rapid mobilization quickens circulation, thus lessening the chances for stagnation, clotting, and pulmonary emboli. There have been no instances of emboli among the 700 cases upon which this report is based.

Early body motion after operation maintains muscle tone, which is highly desirable. Present day orthopedists recognize this fact; their trend is away from heavy casts which restrict motion and thus cause muscle atrophy. Motion prevents the accumulation of waste products in the tissues.

Rapidly mobilized patients do not usually need purgation or catheterization for their normal body functions are resumed early after regular motion is resumed. In a comparative study of 303 patients,[7] half of whom were rapidly mobilized and half of whom remained immobilized for several days postoperatively, catheterization was necessary five-tenths times per patient among the rapidly mobilized as against three times per patient among the non-mobilized.

Pain and incisional discomfort which are often intense when a patient rises on the first or second postoperative day diminishes rapidly, if one is to judge by the number of injections of narcotics needed by the patients rapidly mobilized. In the comparative study just referred to it was demonstrated that the rapidly mobilized patients averaged seven injections, whereas those who remained in bed averaged 13.

The attitudes of well-being and of independence, which are inevitable sequellae of rapid mobilization, are indeed worthy of mention.

The unanimous approval by the patients themselves of this method of postoperative treatment is significant. Of the 700 cases that have risen early, not one patient was sorry he had done so; and not one preferred delayed rising after he had experienced rapid mobilization with previous operation. They expressed their gratitude for a short hospital stay, for the curtailment of their expenses, and for getting them back on the job again as wage earners far ahead of schedule.

As an ardent proponent of rapid postoperative mobilization, I have found no contraindications for employing this mode of treatment: any patient who is a good operative risk is also a fit subject for rapid mobilization.

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NEW ORLEANS

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A CENTURY OF MEDICAL PROGRESS

Under this title the Statistical Bulletin of Metropolitan Life Insurance Company salutes the centenary of the American Medical Association. During this momentous century medical and sanitary science has made amazing progress in conserving the lives and safeguarding the health of the people. The Bulletin points out that not the least of the blessings flowing out of the marked reduction in death and disability are the social and economic benefits of fewer broken families, fewer orphans, longer life with much increased production.

Not only were our forebears subject to a generally high death rate year after year but also to the periodic ravages of cholera yellow fever, smallpox and a number of other diseases. Whereas vital statistics are very poor in the country as a whole in the early nineteenth century, figures are available for New Orleans, and certain other large cities. An example of the devastation that was often inflicted on our area is the cholera epidemic in New Orleans in 1832. There were 10,471 deaths in this single epidemic, a figure in excess of ten per cent of the entire populace. The Bulletin concludes by stating that as the American Medical Association begins its second century, the physician will be concerned more and more with the degenerative diseases rather than with the diseases of environmental origin, with the chronic diseases of later life rather than with the childhood infections, and with diseases of longer duration rather than with acute conditions. These changes bring with them a host of new and challenging problems. The medical profession will, as before, meet this challenge with ever increasing effectiveness.

DEVELOPMENTS IN THE FIELD OF OCCUPATIONAL DISEASES

It is somewhat surprising to learn that the South outranks the West industrially and that there are now more industrial than agricultural workers in our area. For this reason, therefore, we are constrained to give increasingly more attention to the diseases that are of occupational origin.

The U. S. Department of Labor has listed ten major hazards of employment. These

are: (1) abnormalities of air pressure, (2) abnormalities of temperature, (3) dampness, (4) defective illumination, (5) dust, (6) infection, (7) radiant energy, (8) repeated motion, pressure or shock, (9) poisons, (10) dermatoses. Grey has listed three postulates which must be proved to establish a diagnosis of occupational disease, namely, exposure to a known harmful substance; the presence of clinical symptoms and objective findings resulting from contact with a specific harmful substance; and finally, confirmation by established laboratory criteria.

It was in 1911 that effective labor legislation began in the United States. It was in that year that New York and California made the reporting of occupational diseases compulsory and New Jersey made certain occupational diseases compensable. Now all the states except one have laws requiring compensation for industrial accidents. About half of them have laws requiring compensation for at least some of the industrial diseases.

In addition to Federal and State Legislation requiring employers to pay for accidents and occupational diseases, impetus has been given by a number of voluntary organizations and scientific and professional associations. In the forefront of these latter have been the National Safety Council, the American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association. The American College of Surgeons organized its Committee on Industrial Medicine and Traumatic Surgery in 1926. This committee has done excellent work in setting minimum standards for medical services in industry, in surveying the medical departments of industrial plants and accrediting those that measure up to their standards. The Council on Industrial Health formed by the American Medical Association has had a strong influence on the continued development in industrial medicine through its Annual Congress on Industrial Health, through its exhibits and by influencing the state and local medical societies to appoint committees and help them develop programs on industrial medicine and health. Post Graduate and undergraduate industrial medical education are also being stressed by this Council.

LOEFFLER'S SYNDROME

In 1913 Loeffler described a number of patients all of whom suffered from a peculiar type of pneumonia. The salient features of the condition included transient, successive, pulmonary infiltrations, with a paucity of physical organs for the most part. In certain of the patients asthma was present but the majority had no symptoms. There was a marked blood eosinophilia ranging from 10-70 per cent. In the past year or two a fuller delineation of the condition has developed. In the roentgen-ray are noted infiltrations of homogeneous density and varying size. These may be patchy or confluent. Complete resolution in a matter of two to three weeks is usual though a few linear strands may remain. There is no predilection for upper or lower lobes. Evidences of atelectasis, calcification and cavity formation are completely lacking. Because of the mildness of the condition for the most part, the pathologic lesions have only been described once or twice. Sections of lung show replacement of the normal parenchyme by fibroblasts and collagenous fibers. Large numbers of eosinophils, plasma cells, lymphocytes and giant cells are seen in the meshes. There is a periarterial inflammatory process not unlike periarteritis nodosa.

Apparently there are a number of agents capable of eliciting this syndrome. Among these are the brucella organisms and amebas but more particularly the helminths including Trichinella, Ascaris and Ancylostoma. Some 26 cases were reported from Florida, and in view of the extreme frequency of helminth infestations in Louisiana that can be little doubt of its existence here.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

STATE COUNCIL ON MEDICAL, DENTAL AND PHARMACEUTICAL SERVICES

At the last meeting of the House of Delegates, on a proposal made by the Louisiana Pharmaceutical Association, it was agreed that the Louisiana State Medical Society should participate in the formation of a State Council on Medical, Dental and Pharmaceutical Services. Our president has appointed the following committee from the State Society:

Dr. Emmett L. Irwin, Chairman; Dr. O. W. Bethea, Dr. George Hauser.

Considerable progress has been made in the direction of consummating the three organizations into a functioning unit for the better understanding of problems which are of importance to the groups. Dean McCloskey of the New Orleans College of Pharmacy, Loyola University, who formulated this idea is very active in the development of the group.

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HIGHLIGHTS OF THE AMERICAN MEDICAL MEETING IN ATLANTIC CITY, JUNE 9-13

The new officers of the Association, elected at Atlantic City, for 1947-48 are: Dr. Roscoe L. Sensenich, South Bend, Indiana, President-Elect; Dr. Thomas A. McGoldrick, Brooklyn, N. Y., Vice-President; Dr. George F. Lull, Chicago, re-elected Secretary and General Manager; Dr. Josiah J. Moore, Chicago, re-elected Treasurer; Dr. R. W. Fouts, Omaha, Nebraska, re-elected Speaker of the House; Dr. Francis F. Borzell, Philadelphia, Vice-Speaker of the House; Dr. Dwight H. Murray, Napa, Cal., re-elected to a five year term, Board of Trustees; Dr. Edward J. McCormick, Toledo, Ohio, elected to serve a five year term, Board of Trustees.

Also: Dr. Lloyd Noland, Fairfield, Ala., re-elected as a member of the Judicial Council; Dr. John H. Musser, New Orleans, re-elected as a member of the Council on Medical Education and Hospitals; Dr. William Middleton, Madison, Wis., elected member of the Council on Medical Education and Hospitals; Drs. Stanley P. Reimann, Philadelphia and L. B. Jackson, San Aantonio, elected to the Council of Scientific Assembly; Dr. James R. McVay, Kansas City, Mo., re-elected a member of the Council on Medical Service, and Drs. Elmer Hess, Erie, Pa. and Jesse D. Hamer, Phoenix, Ariz., elected to the same Council.

The House of Delegates selected Chicago as the 1948 convention city; Atlantic City for the session in 1949 and San Francisco in 1950.

Adopted in toto were the recommendations made by Dr. Edward L. Bortz of Philadelphia, our new president. They were:

1. A two-day scientific session for general practitioners at the time of the House of Delegates.

2. Change of meeting place for the semi-annual session—to convene in a different geographic district each year—at which time the two-day session for general practitioners would be held.

3. Closer affiliation with third and fourth year medical students—possibly by affiliate membership—and re-establishment of a student section in The Journal, and encouragement of presentation of scientific papers at county, state and even national levels; also to study the possibility of a student section of the scientific assembly.

4. The Secretary, in collaboration with the councils and bureaus, to prepare an attractively illustrated booklet describing the various activities carried on by the Association for distribution to graduating medical classes (Note: This booklet has been in preparation and was side-tracked

by work of the Centennial Session).

5. Further clarification of public relations activities of the Association.

6. More experienced representatives as speakers for lay groups and legislative bodies, and the establishment of a speakers' bureau to assist those representatives.

7. Greater utilization of the Woman's Auxiliary as an instrument in the field of public relations.

8. Establishment by the House of Delegates of a Committee on Nursing Problems.

9. Better channeling of information to the House of Delegates of the activities of departments, bureaus and councils.

10. Active cooperation by the Association with governmental officials to work out a program for prompt medical service in case of another national emergency.

11. The House of Delegates to take under advisement a future building program for the Association headquarters.

The Council on Medical Education and Hospitals adopted new standards for residencies and fellowships in the specialties. These will appear in the proceedings of the House to be published in The Journal, and will also be reprinted and distributed.

The National Conference of County Medical Society Officers billed as a "Grass Roots Conference," held its initial meeting in Atlantic City and was unanimously voted continuance. This action was approved by the House. Future meetings will be held for the purpose of developing a working partnership between the A. M. A. and every physician.

The Atlantic City registration totaled 15,667 physicians, making our Centennial Session the greatest medical meeting ever held anywhere in the world.

In keeping with the progress made at the Atlantic City Conference of County Medical Society Officers, it is fel that the plans and constructive suggestions should be carried to every state and properly presented to the various secretaries of our parish societies.

There is going to be held a regional meeting of the American Medical Association in New Orleans on October 23 and 24 this year. The object of this meeting will be to discuss questions on medical service and public relations. It would therefore seem obvious that it might be desirable to hold a meeting of the various parish secretaries just preceding this regional meeting or else to postpone the time until just previous to the next annual meeting of the State Society. The object of this meeting would be to bring in direct contact the secretaries of our parish societies with the officers and members of various committees of the American Medical Association. At this time there could be discussed problems of mutual interest and thus get the opportunity to help implement the policies developed by the American Medical Association in relation to medical service expansion, medical care, public relations, and other vital subjects.

THE AMERICAN ACADEMY OF GENERAL PRACTICE

At the American Medical Association meeting in Atlantic City there was consummated a plan to establish the American Academy of General Practice. The members of this academy would be composed of general practitioners. It would have standards and requirements for individual physicians to become diplomats and to practice general medicine under such a specialization. The initial meeting was very flattering, being attended by some 219 general practitioners. Unquestionably this is a distinct step forward and will serve to give the general practitioner a proper standing in the medical world. Our state was very fortunate in having Dr. J. P. Sanders of Shreveport placed on the board of directors. You will unquestionably receive from him appropriate information and instructions as how to how one may proceed to align himself with thi sprogressive group of doctors. We feel assured that if the doctors so engaged will manifest their interest and enthusiasm, there can be developed in this state a very strong lever for the proper recognition of the general practice of medicine. Do give Dr. Sanders and the American Academy of General Practice your support.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

August 12. Orleans Parish Radiological Society, 7:30 p. m.
August 15. Lakeshore Hospital Staff, 8 p. m.
August 18. Hotel Dieu Staff, 8 p. m.
August 20. General Practitioners, Hutchinson Memorial Auditorium, 8 p. m.
August 21. Clinico-pathologic Conference, Touro Infirmary, 12 noon.
Veterans Administration Hospital Staff, 8 p. m.
August 25. Board of Directors, Orleans Parish Medical Society, 8 p. m.
August 27. French Hospital Staff, 8 p. m.
August 28. DePaul Sanitarium Staff, 8 p. m.
August 29. New Orleans Dispensary for Women and Children Staff, 8 p. m.
September 3. Mercy Hospital Staff, 8 p. m.
September 4. Clinico-pathologic Conference, Touro Infirmary, 12 noon.
Executive Committee, Baptist Hospital, 8 p. m.
September 5. Ochsner Clinic Staff, 8 p. m.

N. J. TESSITORE, M. D., Secretary.

NEWS ITEMS

Dr. James W. Burks, Jr., addressed the West Tennessee Medical and Surgical Association at Dyersburg on May 22. He spoke on "Some Common Epidermal Sensitizations."

Dr. Wm. B. Clark was elected to membership in the American Ophthalmological Society at the meeting of this organization at Warm Springs, Va., June 5-7.

Dr. Clark served by invitation as an Associate Examiner on the American Board of Ophthalmology examinations which were given at Philadelphia, June 15-18.

Dr. J. W. Davenport, Jr., and Dr. Edwin H. Lawson attended a meeting of the South Mississippi Medical Society and the South Mississippi Medical Society Auxiliary at Hattiesburg, June 12.

Dr. Davenport presented a paper entitled, "A Practical Approach to the Rh Problem"; Dr. Lawson spoke on "Meningitis Due to Salmonella."

Dr. Daniel J. Silverman read a paper prepared by himself and Dr. Alan Leslie, on "Salmonella—A Cause of Chronic Bacteria Dysentery" at the meeting of the American Gastro-Enterological Association in Atlantic City immediately preceding the AMA Convention.

Dr. Early Conway Smith was recently re-elected president of the Lakeshore Hospital Staff. Other officers re-elected were: Dr. Robert M. Willoughby, vice-president; and Dr. Alan Leslie, secretary-treasurer.

Members of the executive committee for the coming year are: Drs. Willoughby, E. D. Matthews, L. J. O'Neil, W. P. Bradburn, Jr., Irven Cahen, Edward W. Nelson, John S. Herring, Wm. C. Rivenbark, and H. L. Kearney.

CHANGES IN MEMBERSHIP ROLLS

During the month—

Five active members, Drs. Harry Fishbein, Allan J. Hill, Emile Maltry and Paul B. Reaser, and one intern member, Dr. A. S. Warren resigned because of removal from New Orleans.

Four members passed away, Dr. Theobald R. Rudolf, active; Drs. W. W. Calhoun, E. D. Friedrichs and J. A. Lewis, inactive.

The following members participated in the scientific program of the A. M. A. at the meeting in Atlantic City June 9-13:

Dr. John Adriani opened the discussion on Drs. J. J. Jacoby, J. M. Coon and H. M. Livingstone's paper—"Effect of Procaine on Liver Function: An Experimental and Clinical Study."

Dr. Ruth G. Aleman opened the discussion on Drs. Jerome L. Kohn and Alfred E. Fischer's paper —"Management of Whooping Cough in Infants."

Dr. W. D. Beacham presented a paper on "Ectopic Pregnancy."

Drs. George E. Burch and Clarence T. Ray presented a paper on "The Cardiovascular System as the Effector Organ in Psychosomatic Phenomena."

Dr. Burch participated in the Question and Answer Conference on Cardiovascular Diseases, discussing the "Problems in Electrocardiography."

Dr. Ansel M. Caine opened the discussion on Dr. John B. Dillon's paper—"Anesthesia in the Aged."

Drs. Manuel M. Garcia and Leon J. Menville presented a paper on "Critical Evaluation of Surgical and Radiation Therapy for Carcinoma of the Cervix."

Dr. George M. Haik presented a paper on "Intraocular Foreign Bodies: Wartime Experiences Applied to a Peacetime Problem."

Dr. James K. Howles and Dr. E. R. Gross of Philadelphia presented a paper on "Oral Bismuth Therapy in Syphilis and Various Inflammatory Dermatoses."

Dr. Mercer G. Lynch presented a paper on "Traumatic Injuries of the Larynx, Especially Gunshot Wounds and Their Repair."

Dr. Champ Lyons presented a paper on "Management of Protein Deficiency in Surgical Patients: Use of Whole Blood Transfusion."

Dr. Alton Ochsner, chairman of the Section on Surgery (General and Abdominal) gave the chairman's address: "Carcinoma of the Lung."

Dr. William Parson opened the discussion on Dr. Sidney C. Madden's paper on—"Protein Nitrogen Following Injury."

Drs. Ralph V. Platou, John Kometani and Norman Woody presented a paper on "Pediatric Deaths in a Large Central Hospital."

Dr. M. T. Van Studdiford opened the discussion to Drs. G. H. Faget and Paul T. Erickson's paper—"The Chemotherapy of Leprosy."

Scientific exhibits were presented by—

Drs. George E. Burch and Clarence T. Ray—"Cardiovascular Syphilis."

Drs. George E. Burch and Paul Reaser—"Radio Elements and Mechanism of Congestive Heart Failure Radiosodium."

Dr. Grace A. Goldsmith—"Treatment of Macrocytic Anemia with Pteroylglutamic Acid."

Drs. Champ Lyons, H. S. Mayerson and Paul T. DeCamp—"Chronic Shock, the Problem of Reduced Blood Volume in the Chronically Ill Patient."

Dr. J. Brown Farrior—"Ear Surgery."

Dr. James K. Howles, DeW. F. Mullins and William B. Stewart—"Cutaneous Gramulomas."

Drs. John Adriani and David A. Davis—"Physiologic Changes During Spinal Anesthesia."

Awards—

Drs. George E. Burch and Paul Reaser received the GOLD MEDAL in group one for their scientific exhibit on "Radio Elements and Mechanism of Congestive Heart Failure Radiosodium."

Drs. Champ Lyons, H. S. Mayerson and Paul T. DeCamp received a CERTIFICATE OF MERIT in group one for their scientific exhibit on "Chronic Shock, the Problem of Reduced Blood Volume in the Chronically Ill Patient."

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of very month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

LOUISIANA STATE MEDICAL SOCIETY ANNUAL MEETING

The Ouachita Parish Medical Society, in cooperation with the Executive Committee of the State Society, has selected April 12, 13, and 14, 1948, for their annual meeting dates. Plans are being developed to assure our profession a most entertaining, educational and progressive meeting.

SNELLING CHAIRMAN OF ARRANGEMENTS COMMITTEE

Dr. John G. Snelling, Jr., has been appointed chairman of the Arrangements Committee when the Louisiana State Medical Society meets in Monroe next year. The meeting will be held the second week in April, beginning on the twelfth and ending on the fourteenth.

AMERICAN ACADEMY OF GENERAL PRACTICE

The following Associated Press dispatch appeared in the N. O. Times-Picayune. It was felt that it should be reproduced in full as it recounts a very important development in the field of general practice.

GENERAL DOCTORS ORGANIZE SOCIETY LOUISIANA FIRST TO COMPLETE STATE ACADEMY GROUP

Alexandria, La., July 13.—Approximately 100 doctors from all parts of Louisiana today organized a Louisiana state branch of the new American Academy of General Practice which was formed on a nationwide basis at the Atlantic City meeting last June 10 of the American Medical Association.

The American Academy of General Practice is expected to fulfill, among general practitioners, the same functions as are performed for surgeons by the American Academy of Surgeons and for physicians by the American Academy of Physicians. Its object is to revise the standards of general practice and bring greater recognition of the general practitioner.

First Statewide Group

The action today made Louisiana the first state in the nation to complete statewide organization. The new organization was pictured by speakers at the all day meeting as potentially destined to be, on a nationwide basis, the most powerful of all

medical organizations within the American Medical Association, because 60 per cent of the country's doctors are general practitioners.

The Louisiana organization elected Dr. J. P. Saunders of Shreveport president. Under the by-laws and constitution adopted, there is also a post of president-elect who will become president a year hence. This went to Dr. Guy Jones of Lockport. Dr. D. B. Barber of Alexandria was elected vice-president and Dr. J. W. Atkinson of New Orleans, treasurer.

Th efirst board of directors, one from each congressional district in the state, is made up of the following:

First District, Dr. Nicholas J. Chetta, New Orleans; Second District, Dr. J. B. Gray, New Orleans; Third District, Dr. Philip Robichaux, Raceland; Fourth District, Dr. S. L. Gill, Shreveport; Fifth District, Dr. E. L. Carroll of Columbia; Sixth District, Dr. M. C. Wigginton, Hammond; Seventh District, Dr. O. W. Topp, Oberlin; Eighth District, Dr. H. P. Forsythe, Alexandria.

ADDITIONAL ATTENDANCE AT THE A. M. A. MEETING

It was noted in an editorial last month that the final figures for attendance at the A. M. A. meeting were not available at the end of the scientific meeting. This is responsible for our unfortunate neglect to publish the fact that Drs. A. A. Herold, J. P. Sanders and Joseph Shavin, of Shreveport, were all in attendance at the meeting.

If the Journal missed any other Louisiana men it would be glad to name them in an approaching number.

CHARITY HOSPITAL

A meeting of the Medical Division of Charity Hospital was held on Tuesday, June 17 in the Auditorium of the hospital. The program consisted of the following: miliary tuberculosis: response to streptomycin therapy, by Dr. Philip B. Johnson, and bacterial endocarditis: two cases requiring massive antibiotic therapy, by Drs. Norman S. Gilbert and Carl Gulotta.

TOURO INFIRMARY

The Medical Staff of Touro Infirmary has discontinued its regular monthly meeting for the summer. The meetings will be resumed in October.

SHAFFER TO HELP ORGANIZE MEDICAL SCHOOL

Dr. Morris Shaffer, former Rhodes Scholar and present Professor of Bacteriology at Tulane Medical School has been signally honored. He has accepted an invitation to go to Jerusalem where he will organize a Basic Science Department at the University of Jerusalem. He will also advise as to the establishment of a four year medical school. He will remain in Palestine through the summer, returning in time to resume his duties in the Department of Bacteriology at the Tulane University School of Medicine.

ARMY ENGINEERS TO BUILD GREATEST MEDICAL CENTER

What is planned to be the greatest medical research center in the world will be built at Forest Glen, Maryland, by the Corps of Engineers for the Office of the Surgeon General, according to a recent announcement made by Major General Raymond W. Bliss, The Surgeon General. In keeping with technological advances in all fields, based on experiences in the late war, the center will be equipped to anticipate and meet the medical problems of the future as well as to cope with those of the present. The initial cost is estimated at approximately $40,000,000. Construction will be supervised by the District Engineer, Washington, D. C. Engineer District.

Officially designated as the "Army Medical Research and Graduate Teaching Center," the project wil lconsist of a 1,000-bed general hospital, capable of expansion to 1,500 beds; the Army Institute of Pathology building; the Army Medical Museum and Center Administration building; Central Laboratory Group buildings; and the Army Institute of Medicine and Surgery. A working library, animal farm, quarters for the staff and other buildings are included in the plans.

Located just outside of Washington, the new Army Medical Center will have the advantage of close relationship to the Walter Reed General Hospital, the Naval Medical Center, the medical schools of the District and the proposed new Washington Medical Center, with all of whom ideas can be interchanged.

NEW ORLEANS GYNECOLOGICAL AND OBSTETRICAL SOCIETY

At a recent meeting of the New Orleans Gynecological and Obstetrical Society, Dr. Earl Conway Smith was elected president of the organization; Dr. W. D. Beacham was named president-elect; Dr. Curtis H. Tyrone was selected as vice-president; Dr. John S. Herring as secretary and Dr. Harry Meyer treasurer.

EMIC TO END

On July 1 liquidation began of the Louisiana Emergency Maternity and Infant Care program which was administered by the maternal and child health section of the state health department. Payments wil be made to physicians and hospitals for maternity or infant care which was authorized before July 1, 1947. Maternity cases where pregnancy began prior to July 1, 1947; infants under one year of age during th eperiod July 1, 1947 to June 30, 1948, and infants born to mothers who

were pregnant before July 1, 1947, will be eligible for medical and hospital care paid for through EMIC funds during the next two fiscal years.

Approximately 25,000 mothers and babies received care through the program, which began December 1, 1943, at a cost of more than $1,652,389.

In announcing the liquidation, Dr. Waldo Treuting said "The Louisiana state health department would like to express its appreciation to all physicians, hospitals, social agencies and other groups who have cooperated in making this EMIC program meet the needs of the wives and infants of Louisiana service men and women."

MEDICAL PUBLICATIONS NEEDED OVERSEAS

As a result of war and persecution, doctors, dentists and technicians in allied fields throughout Europe have been deprived for more than ten years of news of the latest developments in their professions—the kind of news and analysis contained in this journal.

When you have finished this issue, put it to work by sending it to the SOS (Supplies for Overseas Survivors) Collection of the Joint Distribution Committee, 1 West 39th Street, New York 18, N. Y. It will be placed in a library in a D. P. camp, child care center, hospital or school, for use by professionals desperately anxious to bring themselves up-to-date on the knowledge forcibly kept from them by the Nazis.

INSTRUCTIONAL COURSE IN ALLERGY

The American College of Allergists has announced that its annual Fall Graduate Instructional Course in Allergy will be given in Cincinnati, Ohio, November 3-8, inclusive, under the auspices of the Medical College of the University of Cincinnati.

The program this year is the best ever offered by the College. Forty-six formal lectures are listed and also a special allergy clinic of case presentations. An added feature this year will be three informal discussion groups led by various members of the faculty.

Programs and complete information can be obtained by writing to the College Secretary, Dr. Fred W. Wittich, 423 La Salle Medical Building, Minneapolis 2, Minnesota.

AMERICAN COLLEGE OF SURGEONS

The thirty-third annual clinical congress of the American College of Surgeons will be held at the Waldorf-Astoria, New York, September 8-12. A variety of clinical and scientific features have been provided by Dr. Howard A. Patterson, of New York, Chairman of the Committee on Arrangements, and his committee.

On the first day Dr. Irvin Abell will inaugurate President-elect Dr. Arthur W. Allen, of Boston, and the other new officers.

At this time Dr. Abell will give the address of the retiring president, speaking on the subject "The Spirit of Surgery." Dr. Allen O. Whipple, of New York, will deliver the Martin Memorial Lecture.

The convocation, at which time nearly six hundred initiates will be made fellows, is to be held on Friday evening, September 12. Dr. A. C. Ivy, of Chicago, will give the fellowship address.

NEW BUILDING FOR ALOE COMPANY

The A. S. Aloe Company gave a buffet luncheon and cocktail party for the medical men of New Orleans and vicinity when they opened their beautiful new building at 1425 Tulane Avenue. The building was officially opened by Mayor Morrison and Howard F. Baer of the Aloe Company.

The building is located directly opposite from Charity Hospital and has an enormous stock. This stock is not only for the purpose of supplying the medical profession of the far South but also the physicians of Latin America. A beautiful feature of this new building will be a mural picturing seven eras of Louisiana Medical History. This will be painted by Franklin Boggs, a noted war muralist.

INTERNATIONAL COLLEGE OF SURGEONS

The International College of Surgeons, United States Chapter, will hold its Twelfth Annual Assembly and Convocation in Chicago, September 28-October 4, 1947.

The program will include operative and non-operative clinics, demonstrations, symposia, forums, medical mtoion pictures, exhibits and the formal dedication of the new library and permanent home of the United States Chapter. All meetings, with the exception of the operative clinics, will be held in the Palmer House and the Stevens Hotel.

POST GRADUATE COURSE IN INFECTIOUS DISEASE

The Emory University School of Medicine announces a post graduate course in infectious diseases to be conducted in cooperation with the Georgia Department of Public Health. It will be held September 18-19, 1947, at the Grady Memorial Hospital, Atlanta, Ga.

This course is planned specifically for the public health physician and general practitioner. It is intended to be a practical and comprehensive study of the latest methods of clinical and laboratory diagnosis and treatment of communicable diseases, including venereal infections.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE

As previously announced this organization will hold its twenty-fifth annual scientific and clinical session September 2-6 inclusive, at the Hotel Radis-

son, Minneapolis. In addition to the scientific sessions, the annual instruction courses will be held September 2-5. These courses will be open to physicians and the therapists registered with the American Registry of Physical Therapy Technicians. For information concerning the convention and the instruction course, address the American Congress of Physical Medicine, 30 orth Michigan Avenue, Chicago 2, Illinois.

Dr. G. H. A. Clowes, Ph. D., Sc. D., LL. D., Director Emeritus of the Lilly Research Laboratories, was honored by the American Diabetes Association at its recent annual meeting in Atlantic City, New Jersey. He delivered the annual Banting Memorial address and was awarded the Banting Medal which is given in recognition of distinguished service in the field of diabetes.

Under Dr. Clowes' direction, the Lilly Research Laboratories co-operated with the University of Toronto and Drs. Banting and Best in the early development of insulin of sufficient purity and stability to permit its widespread clinical use throughout the world.

DR. SCHEELE TO REPLACE DR. SPENCER

The resignation of Dr. R. R. Spencer as Chief of the National Cancer Institute of the U. S. Public Health Service to be effective July 1 was announced at the quarterly meeting of the Institute's National Advisory Council, in Bethesda. At the same time, Dr. Thomas Parran, Surgeon General, informed the Council that Dr. Leonard A. Scheele, formerly Assistant Chief of the Institute, would succeed Dr. Spencer.

Simultaneously, the appointment of Dr. A. C. Ivy, vice-president of the University of Illinois and one of the country's leading physiologists, to fill the empty post of Executive Director of the National Cancer Advisory Council was announced. Dr. Ivy succeeds Dr. George M. Smith, Professor Emeritus of Yale University, who resigned some months ago for reasons of health.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The American Association for the Study of Goiter will hold its next meeting in the King Edward Hotel, Toronto, Canada, May 6-8, 1948. The program for the three day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, dry clinics and demonstrations.

NEWS ITEMS

Dr. Ralph H. Riggs of Shreveport, Louisiana, has been one of fifty from a group of well over 650 applicants selected to take Dr. Samuel Fomon's course in Rhinoplasty. Dr. Fomon has been doing plastic surgery for a number of years, the last five or six years in the Manhattan General Hospital in New York City. For some time he has been giving a course to the Board Members of the Ear, Nose and Throat Group, teaching them the basis of Rhinoplasty and Otoplasty. This course is sponsored by the American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery.

A permanent position is open to a physician in Melville, Louisiana, St. Landry Parish. Please contact the President of the Lions Club.

CASH SICKNESS BENEFITS FOR RAILROAD WORKERS

A cash sickness benefit system for railroad workers will begin oeprating throughout the nation on July 1. All disabilities which prevent railroad employees from working, regardless of how or where they occur, are covered under the program.

A physician's statement of sickness will be required before claims can be paid. It is believed that the program will require about 650,000 medical examinations a year. Employees are free to choose ther own doctors, and any physician to whom an employee goes for examination or treatment may supply the information required as initial proof of an employee's claim. The forms on which medical infirmation will be requested from a physician are the "Statement of Sickness" and the "Supplemental Doctor's Statement."

BIRTHS EXCEED 1,500,000 IN FIRST FIVE MONTHS OF 1947

Births in May are estimated to have numbered 302,000 in the United States, according to figures released by the National Office of Vital Statistics, U. S. Public Health Service. This is 29 per cent more than the estimate for May of last year and it brings the total for the first five months of this year to 1,572,000.

Although the birth rate of 26.4 per 1,000 population including the armed forces overseas for the 5-month period January to May, 1947 was nearly 40 per cent higher than the provisional rate of 19.1 for the corresponding period of 1946, the birth rate has been lower this year than it was in the last four months of 1946 when it reached record breaking heights. The decrease has taken place in spite of the fact that publications of this office show that the numbers of marriages reported 10 to 12 months ago and throughout 1946 were unusually large. It is possible that the peak in the birth rate in the latter months of 1946 was due not only to first births to newly married couples, but also to births to families who already had children and first births to couples married before or during the war. The fact that the birth rate has decreased while marriages remained high suggests that now second and third births to established families and first births to persons married more than one year

are adding less to the birth rate than they did at the end of last year.

The estimated number of births in each of the 46 states reporting monthly and the District of Columbia appear in the Monthly Vital Statistics Bulletin being released by the National Office.

HEALTH IN NEW ORLEANS

The Bureau of Census, Department of Commerce, reported that for the week ending June 14 there occurred in the city of New Orleans 110 deaths of which 74 were in white persons and 36 were in non-white individuals. The three year median correspondingly showed a total of 139 deaths so that the area enjoyed a somewhat reduced mortality in contrast to the median. For the following week there was a total of 129 deaths, 82 of which were in white people. The week ending June 28, however, showed a marked decrease to a total of 99, 63 of whom were white, and 36 of whom were non-white. For the corresponding three year median there were 154 deaths.

INFECTIOUS DISEASES IN LOUISIANA

The weekly morbidity report for the State of Louisiana for the week ending May 31, showed measles leading all other reportable diseases with a total of 27 cases. Following measles, numerically, came pulmonary tuberculosis with 19 cases reported, cancer with 18, and whooping cough with 10 cases. There were no other diseases recorded in figures greater than 10. For the week ending June 14, cancer had assumed the first position with a total number of 66 cases. Of the other diseases exceeding 10 there were 45 instances of measles, 44 of unclassified pneumonia, 24 of pulmonary tuberculosis, 23 of whooping cough, and 13 of pneumococcic pneumonia. For the week ending June 21, whooping cough led with 55 cases followed by measles with 45, pulmonary tuberculosis 43, cancer 33, malaria 16, septic sore throat 14, chicken pox 14, unclassified pneumonia 11, and bacillary dysentery 10. It will be noted that there is a sharp rise in malaria during this period which however, was not continued through the week ending June 28 in which the number dropped to 3 cases. In the same interval, cancer was most prevalent of reported diseases, with 55 examples followed by pulmonary tuberculosis with 47, unclassified pneumonia 28, amebiasis 12, and measles 11. There was but one case of polio-myelitis reported in the state.

MONTHLY MORBIDITY FOR VENEREAL DISEASES STATE OF LOUISIANA
Month Ending May 31, 1947

	Total Month This	Total Months Previous	Total 1947 To Date
Chancroid	59	221	280
Gonorrhea	1210	5069	6279
Granuloma inguinale	25	57	82
Lymphopathia venereum	5	33	38
Syphilis	919	3989	4908

INFANT MORTALITY TOTAL

The mortality total for infants for the week ending June 14 was 16, equally divided among white and colored. In the following week there were 11 deaths among infants of which total 7 were white. For the week ending June 28 there was a precipitous drop to a total of 3 deaths, 2 of whom were white children.

JOSEPH TILFORD SCOTT, M. D.
1870-1947

One of the most prominent older physicians of New Orleans died July 5, 1947, after a relatively short illness. Dr. Scott, who was 77 years of age, had retired from a very active practice some ten years ago. He was a graduate of Tulane in the class of 1894 and for many years was connected with the U. S. Public Health Service in New Orleans. Dr. Scott had a unique genealogical record. He was related to three United States Presidents, Madison, Monroe and Taylor.

FRANCIS C. BENNETT, M. D.
1870-1947

Dr. Francis C. Bennett, of Monroe, died on June 27. He was a graduate of the Medical College of Kansas and had been an active member of the Louisiana State Society for many years. His interest and influence in organized medicine will be greatly missed.

BOOK REVIEWS

The Physico-Chemical Mechanism of Nerve Activity: By David Nachmansohn & others. New York, Annals of the New York Academy of Sciences, 1946. Pp. 228.

This monograph embodies the lectures given at a conference held under the auspices of the New York Academy of Sciences in which the leading investigators in the field participated. The lectures covered the most recent experiments in the field of nerve activity, synaptic transmission, and nerve metabolism. There are twelve lectures on various aspects of these fields, an introduction by Tracy J. Putnam, and a conclusion by John F. Fulton. Much of the work reported is concerned with

the question as to whether the transmission of nerve impulses is electrically or chemically mediated. The electrical hypothesis is upheld by Dr. Eccles, whereas, Nachmansohn has given in detail his reasons for believing in the chemical mediation theory. Of particular interest is the lecture by Dr. Gerard entitled "A Critique of the Role of Acetylcholine," in which he questions the importance of acetylcholine in junctional transmission in the central nervous system and suggests that the time is ripe for a new concept of nerve impulse transmission.

The monograph is recommended to those who are interested in obtaining a first hand report of the modern concept of nerve activity as given by the workers who are best equipped to present this information.

H. S. MAYERSON, PH. D

Progress in Gynecology: By Joe V. Meigs, M. D. and Somers H. Sturgis, M. D. New York, Grune and Stratton, 1946. Price $7.50.

In the preface, the author states "It was our policy to select the hobby of each author and ask him or her to write how each felt about a certain subject". The wisdom of this plan is reflected throughout this capital volume which contains contributions by seventy-one authorities in the fields of gynecology and endocrinology.

The careful grouping of the contributions into ten main subdivisions: Growth and Physiology Diagnostic Methods, Functional Disorders, Interrelationship of Endocrine Glands, Sterility and Reproduction, Infections and Their Treatment, Benign Growths, Malignant Growths, Operative Technique, Preoperative and Postoperative Care, is praiseworthy.

Each subject is carefully and completely covered by a recognized authority in each field, in a clear and lucid manner. Seventy-one illustrations and charts of excellent quality, amplify the subject matter. This volume is a must for medical men, surgeons, gynecologists, and endocrinologists. It is a comprehensive, authoritative, enlightening, post graduate course for anyone.

CONRAD G. COLLINS, M. D.

Ambulatory Proctology: By Alfred J. Cantor. New York, Paul B. Hoeber, Inc., 1946. Pp. 524. Price $8.00.

An excellent work, this volume with its 32 chapters covers the field of proctology (excepting colonic surgery) very thoroughly. Noteworthy are the chapters on hemorrhoids and anorectal fistula. Along with chapters on the usual subheads, there are ones on pediatric proctology, electrosurgical technic, and an excellent one on intestinal parasites.

The text is well written in a clear and pleasant style and is aboundantly illustrated with good drawings and photographs apparently selected with great care and certainly good judgment.

MAURICE LESCALE, M. D.

X-ray Diffraction Studies in Biology and Medicine: By Mona Spiegel-Adolf, M. D. and George C. Henny, M. S., M. D. New York, Grune and Stratton, 1947. Pp. 209, 12 tables, 86 figs.

Considerable progress has occurred in the field of x-ray diffraction and the newer technics have been employed in biologic research. The authors have collected the scattered information available, reviewed their own studies of ten years and presented them with the pertaining literature.

This volume consists of twelve chapters and indices of authors and subjects.

Chapter I pertaining to the theory of x-ray diffraction is of considerable interest. It has been shown that electrons will vibrate in the path of an x-ray beam. Radiation of the same wave length as the incident beam will be emitted by the electron. The atom scatters x-rays to an extent depending on the number of orbital electrons it contains and the arrangement or distribution of these electrons. The diffracted rays produce a pattern of spots, arcs or halos on the film. The pattern produced is an index of the molecular arrangement.

In the second chapter, apparatus and technics are discussed. The apparatus consists of: (1) a high voltage generator and x-ray diffraction tube, (2) a diaphragm system for restricting the x-ray beam to a small area, (3) a holder for the specimen, and (4) the casette or film holder. Various types of apparatus and the various technics employed are considered rather completely.

Chapter III deals with the interpretation of diffraction patterns. Chapters IV through XII consider diffraction studies on carbohydates; amino acids; proteins; nucleic acids and nucleoproteins; muscle; lipides; nerves; steroids; and bones, teeth and concretions, respectively.

While the text is clearly written, the brevity of the work requires careful reading for understanding. Unnecessary detailed physical and mathematical discussions have been omitted. The biologist and the research physicians will find this volume a valuable addition to the library.

J. N. ANÉ, M. D.

Genetics, Medicine, and Man: By H. J. Muller, C. C. Little, and Laurence H. Snyder. Ithaca, Cornell University Press, 1947. Pp. viii + 158, figs. 29. Price $2.25.

Six lectures presented at Cornell University in 1945, in the series of Messenger Lectures on the Evolution of Civilization, are here made available to a larger public. Each of the authors is responsible for two chapters, or lectures. Muller writes on fundamentals of the genetic mechanisms, Little deals with parental influence, growth and individu-

ality, and Snyder is concerned specifically with human heredity, including the mutant gene.

The book will be welcomed by medical men. It offers first a vivid account of the nature and behavior of genes. With this background the reader proceeds understandingly into the discussion of aspects of genetics that are of immediate practical importance in medicine. In these days no one engaged in medicine can afford to ignore the contributions toward its progress that are being made in the field of genetics. The present book is a stimulating introduction to these contributions and to ways of thinking that should be cultivated.

HAROLD CUMMINS, PH.D.

The Head, Neck and Trunk: By Daniel P. Quiring. Philadelphia, Lea & Febiger, 1947. Pp. 115, frontispiece, figs. 103. Price $2.75.

This volume on muscles of the head, neck and trunk follows the plan of the author's "Extremities," published in 1945. Excepting a few instances in which two or more muscles are shown, each figure is devoted to the illustration of a single muscle, with its nerve supply and blood supply. These structures are overlaid on outlines of the neighboring skeletal framework, so as to represent their relations to it and the attachments of the muscle. Motor points of the head and neck are illustrated in the final figure. The text accompanying each figure is a concise statement of origin, insertion, function, nerve supply and blood supply —concluded with page references to two of the standard textbooks of gross anatomy.

HAROLD CUMMINS, PH. D.

PUBLICATIONS RECEIVED

Charles C. Thomas, Springfield, Illinois: Cineplasty, by Henry K. Kessler, M. D., Ph. D.; Diseases Transmitted from Animals to Man (3rd Edition), by Thomas G. Hull, Ph. D.; Osteotomy of the Long Bones, by Henry Milch, M. D.

Chemical Publishing Co., Brooklyn: Practical Emulsions, by H. Bennett.

Grune & Stratton, New York: Dermatologic Clues to Internal Disease, by Howard T. Behrman, M. D.; Diagnosis and Treatment of Diarrheal Diseases, by William Z. Fradkin, A. B., M. D.; Paravertebral Block in Diagnosis, Prognosis, and Therapy, by Felix Mandl, M. D., F.I.C.S.

Lea & Febiger, Philadelphia: Occupational Diseases of the Skin, by Louis Schwartz, M. D., Louis Tulipan, M. D., and Samuel M. Peck, B. S., M. D.; A Manual of Fractures and Dislocations, by Barbara Bartlett Stimson, A. B., M. D., Med. Sc. D., F.A.C.S. A Manual of Otology, Rhinology and Laryngology, by Howard Charles Ballenger, M. D., F.A.C.S.; Roentgen Interpretation, by George W. Holmes, M. D., and Laurence L. Robbins, M. D.

Williams & Wilkins Company, Baltimore: Histopathology of the Ear, Nose and Throat, by Andrew A. Eggston, B. D., M. D., and Dorothy Wolff, A. B., M. A., Ph. D.